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ARIZONA MEDICINE
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Original ARTICLES

THE MANAGEMENT OF URETERAL CALCULI

W. G. Shultz, M .D., F.A.C.S,
Tucson, Arizona

My reasons for giving this presentation are (1) a fairly high incidence of calculi in our area and (2) poor management may result in irreparable damage or loss of a kidney or even, in rare instances, a life. The problem is a flexible one and the methods of dealing with it must also be.

One should be skilled in the use of all instruments and methods, and his choice should be determined by a thorough knowledge of the conditions operating in each particular case.

We have frequently seen a patint writhing in agony with a typical attack of what seems unquestionably ureteral colic due to a calculus, only to find it difficult or impossible to demonstrate a calculus because it is so small; but in other cases accidentally find, while looking for something else, that a patient has a large ureteral calculus, already in the lower end of his ureter, who has been so unaware of pain as not to suspect any real physical difficulty, certainly not a stone in the ureter.

For the purpose of this discussion I shall consider (1) the small or medium sized mildly obstructing calculi; (2) the small or medium sized seriously obstructing calculi; (3) the old impacted calculi; (4) the large calculi considered too large to pass through the intramural portion of the ureter, all four classes with or without serious superimposed infection.

The small or medium sized mildly obstructing calculus without infection will usually pass without intervention. The patient may be given fluids freely, a mild sedative, and permitted to carry on his normal activities. However, a careful supervision should be carried out and if the calculus is not passed, and recovered, follow-up studies should be done as the calculus may impact and without symptoms enlarge to a point that it cannot be removed by any except open operative measures, and may result in considerable damage to the attendant kidney. In case infection supervenes, suitable measures should be immediately instituted to combat the infection and remove the calculus. These measures are the same as for the small or medium sized, seriously obstructing calculus; namely, administration of your favorite urinary antiseptic. I would suggest the combination of penicillin and dihydrostreptomycin unless cultures and sensitivity tests have already been done and suggest another more suitable medication. If the calculus is in the lower one-third of the ureter, I suggest removal of the calculus by one of the manipulative methods later desrcibed in this article, followed by catheter drainage of the affected kidney. If these methods are unsuccessful, of course, open operative approach is advisable and in the presence of infection must be done early. The simple passage of a ureteral catheter will overcome the obstruction, afford immediate relief of pain, and establish drainage which is of primary importance in treating infection anywhere. This, in conjunction with appropriate urinary antiseptics and forcing of fluids, may produce complete subsidence of the infection and if it is possible to leave the catheter indwelling for a suitable period of time, the calculus may pass spontaneously after its removal.

Read before Sixty-first Annual Meeting of Arizona Medical Association, May 1, 1952.

For removal of calculi in the lower one-third of the ureter I prefer to use the Council basket with a medium length filiform (Figs. 1 & 2) if possible to pass it, as it permits complete and adequate dilatation of the intramural portion of the ureter, as well as the ureteral meatus, and also helps prevent difficulty in bringing the calculus through these areas after it becomes engaged. The Council as stated has the advantage of dilatation of the intramural portion of the ureter (Fig. 2), however, its disadvantage is that the instrument may pass the calculus in front and in such manner that it is impossible to engage it because it cannot enter the basket at the back side through the closely meshed wires. The Robinson stone dislodger (Fig. 3) is made with only four wires, permits dilatation of the intramural portion of the ureter to a fair extent, and will still permit, the calculus to enter it from any side; therefore, it will frequently be successful where the Council fails. The Johnson stone basket (Fig. 4) readily admits entrance of the calculus but does not permit manual dilatation, and, therefore, once the calculus is engaged it must be withdrawn without the assistance of dilatation, and is more prone to result in damage to the ureter or ureteral meatus. Ureteral meatotomy may, of course, be combined with any of the above instruments to assist in extraction of the calculus. A small calculus impacted in the intramural portion of the ureter may be engaged in any of the above baskets, or it may be forced back into the dilated portion of the ureter where it is more easily picked up. However, frequently a calculus impacted in this region may not permit the passage of any instrument including catheter due to the edema or stenosis. Ureteral meatotomy in such cases may be of no avail as an aid to passing the instrument. However, ureteral meatotomy, once the calculus is impacted in the intramural portion, may be all that is necessary to make it possible by manipulation between the beak of the instrument in the bladder and the finger in the vagina, in the female, or in the rectum in the male, to express the calculus out of the lower ureter. Where the basket has been introducd and manipulative efforts have failed as in Figs. 1, 2, 3, & 4 a ureteral catheter should be passed to the renal pelvis and left indwelling for forty-eight hours or more if possible. However, in this case it was impossible to pass a ureteral catheter, but the dilatation of the intramural portion of the ureter, plus a meatotomy were apparently adequate and the calculus was passed uneventfully a few days later. All such cases must be carefully supervised and immediate surgical intervention carried out if obstructive damage or/and infection supervenes.

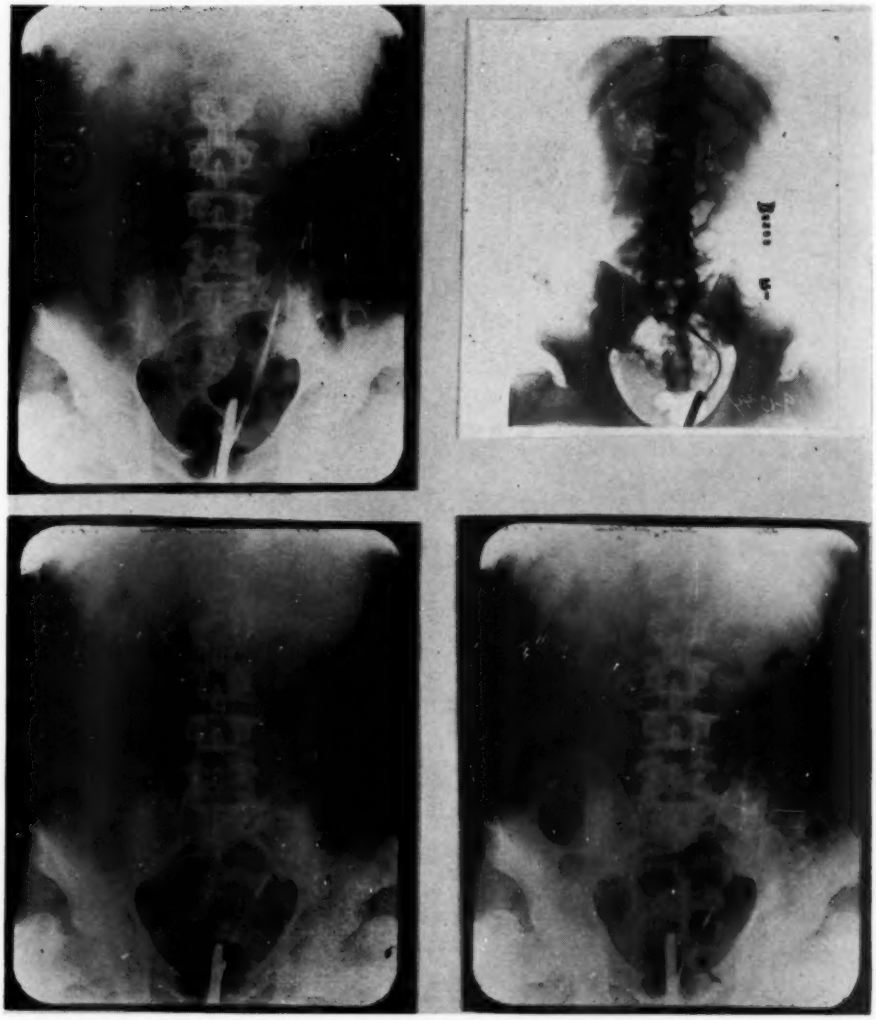
In case of the old impacted calculus that has been in its location for a long time, peri-ureteritis and fibrosis has taken place, and it may have become so imbedded that manipulative procedures will be unsuccessful and ureterolithotomy may be necessary. However, if not too large, a preoperative cystoscopic effort is justifiable. Large calculi above 2 cm. in diameter at any site in the ureter usually should be approached by open operation.

In the upper two-thirds of the ureter, baskets should not be used in an effort to remove the calculi in any case, but in the small or medium sized calculi with marked obstruction, ureteral catheterization, multiple ureteral catheterization, or the loop catheter may frequently bring about passage of the calculus without complications, and obviate the necessity for surgical intervention.

– CASE REPORTS –

A few cases are now presented which do not show complete success from manipulative measures, but illustrate some of the points brought out in this presentation. The hospital records will show the successes and I can assure you that they constitute a good 95%.

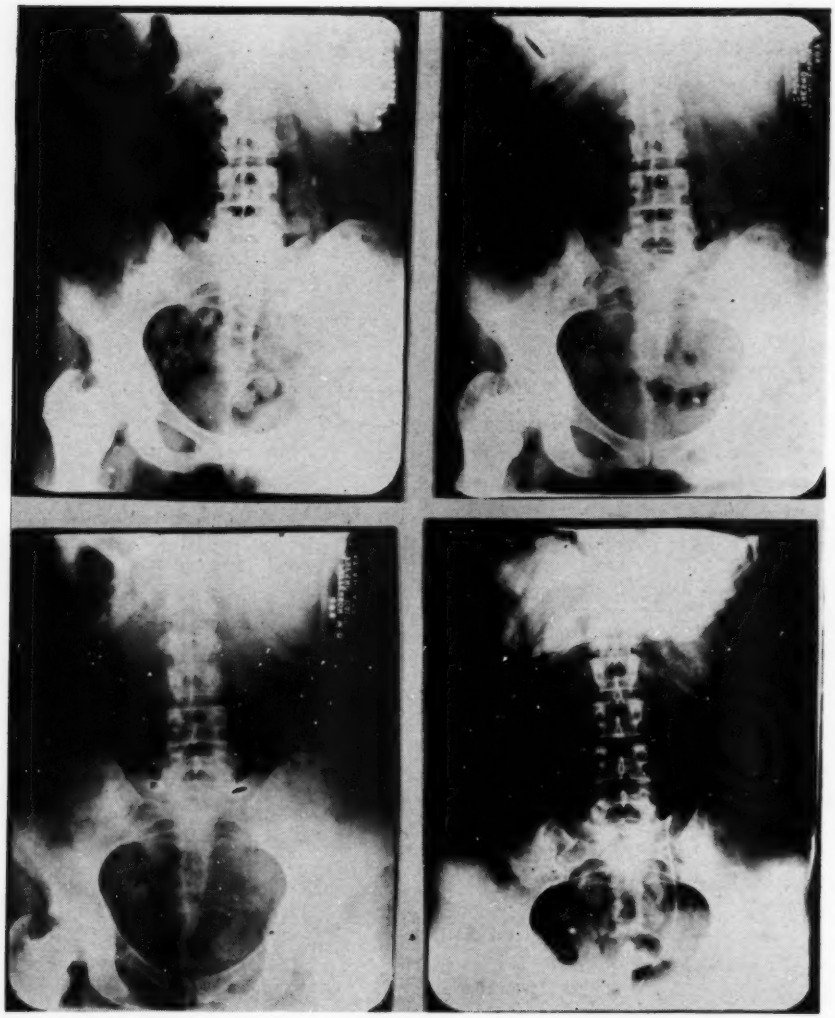
Case No. 1: This patient had a calculus approximately 1 cm. x 2 cm. in size which had become impacted in his lower left ureter. Infection had developed and the patient had been allowed to remain in this condition for too long a period of time before help was sought. This was before the day of our wonder drugs. A catheter was passed beyond this calculus and considerable symptomatic relief obtained. A great deal of peri-ureteritis was present. His temperature and general condition did not improve with drainage, and it was felt that a left nephrectomy might be necessary. However, it was decided to do an operative approach to this calculus which was done through an extraperitoneal abdominal operation. The calculus was removed from the lower end of the ureter. The progress of the patient was such that a nephrectomy had to be done the following day. At the time of nephrectomy the kidney was



Upper left—Council basket passed by a calculus in intramural portion of ureter. Calculus appears in lower end and would seem to be in the basket. Such is not the case. Upper right—The Council basket in open position dilating the intramural portion of the ureter. Lower left—Robinson stone dislodger in use in the same case. Lower right—Johnson stone basket likewise in use in the same case.

found to be very friable, and while I was reaching for a renal pedicle clamp, the kidney pulled loose from its pedicle in the hands of my assistant. A perfectly dry laporotomy sponge folded twice, was grasped, and the renal pedicle compressed against the vertebral column with this sponge by manual pressure. It was held for five minutes during which time no bleeding occurred. The sponge was then removed, no hemorrhage ensued, the renal fossa was emptied of blood clots, a rubber dam drain was placed in the renal fossa, no effort was made to locate and ligate the renal pedicle, and the incision was closed in the usual manner. This procedure as you probably know is purported to have first been done in France, has been done numerous times since, and the only complication which followed this particular procedure, was my loss of sleep for the next few nights.

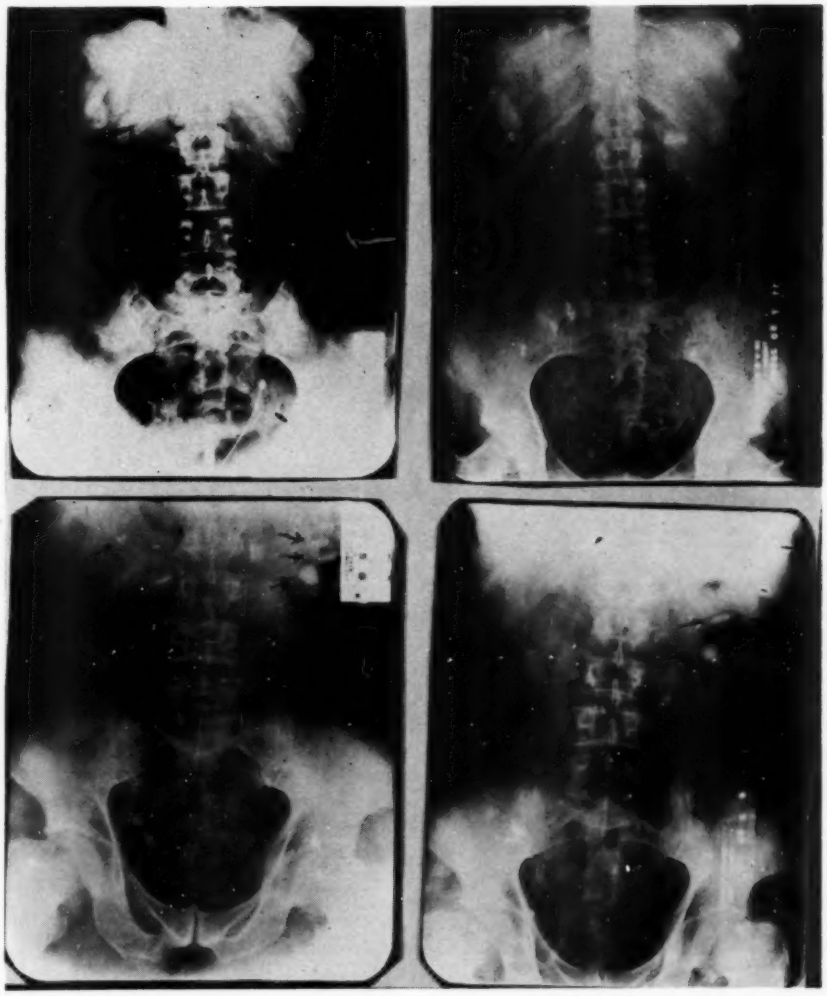
Case No. 2 is a man sixty-one years of age when he first reported to me. His case does not fall entirely within the province of this presentation, but it does illustrate the manner in which some of the manipulative measures are combined to aid in the management of various cases. At his first visit (Fig. 11) the right kidney contained four large calculi and a group of sand. The left kidney contained three cal-



Upper left—Two calculi in the upper end of the ureter which appear as one since they are so close together . Upper right—Calculi pushed back into the renal pelvis. Lower left—One calculi now in renal pelvis and one again in the upper ureter. Lower right—These two calculi enclosed in a lopp catheter and drawn down to about the mid portion of the ureter.

culi and a group of sand. The lower left ureter contained two fairly large groups of calculi, the lower right ureter contained one large group of calculi, and there was a calculus in the urinary bladder. This patient had prostatic obstruction. A resectoscope was used, and the calculus removed from the urinary bladder. The prostate was then removed by resection. The calculi were removed from both the lower right and left ureters, by doing a ureteral meatotomy on both sides and manipulating the calculi out of the lower ureters. The patient's urine was changed from an alkaline one to an acid one and during the next five years he passed a considerable amount of sand. His x-rays (Fig. 12) five years later show that the left kidney contained one small calculus, the right two fairly large calculi, but the balance of the urinary tract was free of calculi.

Case No. 3: This case illustrates the use of the loop catheter. Fig. 5 shows two calculi in the upper ureter although they are so close together that they appear as one. A California urologist attempted to aid in their passage by the use of multiple catheters. Fig. 6 shows that these two calculi have been pushed back into the renal pelvis by this procedure. Subsequently, Fig. 7 shows that one of these calculi



9 10 11 12

Upper left—They are now in the lower one-third of the ureter. Upper right—The same two calculi at a still lower position in the ureter where they were dropped by too much tension on the catheter. Lower left—The right kidney contains four large calculi and a group of sand. The left kidney three calculi and a group of sand. The lower left ureter contains two fairly large groups of calculi. The lower right ureter contains one large group of calculi, and there is a calculus in the urinary bladder. Lower right—Same patient five years later now shows one small calculus in left kidney. The right conatins two fairly large calculi. The balance of the urinary tract is free of calculi.

has come down again into the uper third of the ureter. The other still remains in the renal pelvis. About this time the patient left California and came to Arizona, and the x-ray examination here showed the calculi to occupy this same position. The patient had considerable trouble with urinary infection, recurrent, which was controlled each time with urinary antiseptics. One calculus being in the ureter and the other in the kidney posed a problem. She was advised that if they were both back in the ureter in their original position a surgical approach through the loin to this portion of the ureter would be made for their removal. A reasonable period of time was permitted for this to occur, but since it did not it was decided to make an attempt with the loop catheter to see if the one calculus in the ureter could be obtained. Therefore, a loop catheter was passed to the renal pelvis and a loop made. It was drawn down into the ureter and an x-ray showed that it had picked up both calculi. Fig. 8 shows that these had been brought down to the mid portion of the ureter and with gentle pressure they were brought down still further, and Fig. 9 shows that they are now in

13

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Upper left—Shows loop made in kidney pelvis and calculus opposite the body of the fourth lumbar vertebra. Upper right—Shows this loop brought down to and engag ng the calculus. Lower left—Shows Bransford Lewis ureteral dilator accidentally acting as a forcep grasping ureteral calculus.

the lower one-third of the ureter. At this point so much traction was being exerted that the loop was straightening out and it was felt that these calculi would be dropped. Therefore, the ureteral catheter was fastened to her thigh with elastic traction, and after twenty-four hours it was found that the catheter had become quite loose. Therefore, gentle traction was made on it and I considered reattaching the elastic traction to the catheter, but inadvertently exerted a little too much force and felt the catheter come away. X-ray (Fig. 10) disclosed that it had dropped the two calculi in the lower most portion of the ureter. Numerous attempts were made with catheters and baskets to get by these calculi in hopes of engaging them. Nothing could be passed by them. Therefore, an extraperitoneal approach to the ureter was done and a ureterolithotomy performed with successful removal of both calculi. Numerous adhesions were found in the region of the calculi and it was felt that, that portion of the ureter had ben involved in previous inflammatory reaction following pelvic surgery. This patient's progress has been quite satisfactory since that time although she requires dilatations of her lower ureter and lavage of the renal pelvis on this side.

Case No. 4: Briefly I would like to report another case in which the loop catheter is used. A single small irregularly shaped calculus had blocked at the beginning of the mid portion of the ureter just opposite the transverse process of the fourth lumbar vertebra. A loop catheter was passed to the renal pelvis and the loop made (Fig. 13). This loop was then gradually withdrawn and (Fig. 14) shows it engaging the calculus for removal.

Case No. 5: Thi spatient had an impacted ureteral calculus in the lower one-third of her ureter approximately 1 cm. x 2 cm. in size, and reported to me in 1923. A Bransford Lewis dilator was used to dilate the ureter up to the calculus. When the calculus was reached and efforts at dilatation continued the jaws of the dilator accidentally, and unintentionally, were forced by the calculus in such manner that it became engaged in them as shown in Fig. 15. All efforts to disengage this instrument from the calculus failed. The ureteral walls held it

tightly clamped against the calculus and it was slowly brought down to the intramural portion of the ureter. I still made numerous attempts to drop the calculus, but these were unsuccessful. A ureteral meatotomy was done and the calculus removed still firmly clamped within the jaws of the dilator. Fortunately, the post operative progress of this patient was uneventful. Ain't nature grand!

– COMMENT –

Contra-indications for use of manipulative measures: (1) Where the calculus is relatively small in comparison to the ureter, complete obstruction or infection are not present, and the calculus seems liable to pass spontaneously. (2) The aged. (3) Prostatitis, hypertrophy or carcinoma of the prostate, epididymitis. (4) Infected hydro-ureteral nephrosis above the calculus. A careful preoperative effort to obtain a calculus does no harm and may prevent a ureteral lithotomy, in a patient who may in the future have another calculus passing through the same channel. The improper application of any instrument may end in poor results and in justly deserved criticism. This, of course, is a general statement which may be applied as a deserved criticism against all procedures, improperly applied by the surgeon, or any investigator in any field. Prolonged and determined efforts with any of the described methods are likely to cause excessive trauma to the ureter, thereby increasing spasm, obstruction, infection, and leading to complete failure. In the event of failure to relieve the obstruction one must choose between further observation, with the possibility of spontaneous passage of the calculus, or surgical removal. In the presence of infection one must proceed with caution and very excellent judgment as well as very close supervision. Prompt action when surgery becomes indicated cannot be over-emphasized and unnecessary delay at this time, will result in serious and possibly irreparable damage to the kidney.

CARCINOMA OF THE BREAST: DIAGNOSIS AND FACTORS DETERMINING PROGNOSIS AND TREATMENT

Ian Macdonald, M. D.*
Los Angeles, California

Cancer of the female breast, second ranking cause of mortality from cancer in American women, continues its upward trend of incidence and mortality which first became evident early in this century. Even in the decade just past, with more general application of radical surgery by an increasing number of well-trained surgeons throughout the country, and with increasing emphasis on "early" diagnosis and "early" treatment, the death rate from mammary cancer continues its gradual but inexorable rise. That this increase is only partially due to an increase in the aging fraction of the population is shown by age-adjusted statistics. In Connectciut, for example, a State where there has been a highly dveloped cancer control program for some 20 years, the age-adjusted mortality rates per 100,000 for breast cancer for 1937 and 1948 were, respectively, in the order of 30 and 37.

At present the annual mortality from mammary cancer in the United States verges on 19,000. There are, at any time, over 70,000 current cases, a factor of 3.5 indicating rather accurately the ratio of mortality to morbidity in this disease.

Because we lack a more exact serologic or other approach, early diagnosis of breast cancer rests on meticulous physical examination of the woman whose complaint is of the breast. Proper examination demands individual development of a strict, painstaking routine in which all four quadrants and the subareolar area of each breast are meticulously surveyed, both in the siting and supine positions. Breast contour, nipple level, areolar retraction or distortion, and early skin changes with the arms in varying positions are features requiring careful review. Palpation of axillary, supraclavicular, and cervical lymphnodal areas is of extreme prognostic importance. Complete physical examination is mandatory, of course, with emphasis on pelvic and rectal examination for not infrequent instances of concomitant gynecologic pathology.

In the strictest sense, there is only one cardinal objective in clinical exacmination of the female breast: to determine or to exclude the presence of a space-occupying, three-dimensional tumor. If such a tumor is present, the physician has

*From the Department of Surgery, School of Medicine, University of Southern California.
Read before Annual Session of Arizona State Medical Association at Phoenix, Arizona, May 1, 1952.

reached the limit of *exact*, tactile diagnosis. It then becomes his responsibility to advise, and the patient's to accept, early biopsy and histologic examination. This holds true both for small tumors of debatable nature and large tumors clinically consistent with carcinoma, for even the elect may mistake fat necrosis, for example, for cancer. Further, even in obviously advanced and inoperable breast cancer, a biopsy should be performed before palliative treatment, either radiological or medical, is instituted.

Of every 100 women whose complaint is of the breast, approximately 60 will be found to have some phase of the condition generally (and inaccurately) referred to as cystic disease or mastitis, 20 will be proved to have cancer, perhaps 15 will exhibit a fibroadenoma, and the remaining 5 will represent the *curiosae mammae*, such as traumatic fat necrosis, plasma cell mastitis, tuberculosis, and a few rare tumors such as lipomata, chondromata, and so forth. Thus the most frequent problem in early diagnosis is the distinction between the variegated changes in mammary consistency which characterize cystic disease and the physical features of a distinct, space-occupying, or true, lump in the breast. Accuracy in differentiating between true and false lumps in the breast comes from that high pitch of tactile sensitivity, or *tactus eruditus*, which can be acquired only by experience.

Many unnecessary explorations and biopsies of the breast are done because of the physician's failure to recognize the historical features and physical criteria of cystic disease. The rhythmic periodicity of premenstrual soreness and tenderness of the breasts in cystic disease is its most frequent symptom. Unhappily, early cancer of the breast is rarely symptomatic and requires objective identification of a nontender mass. Many patients with cystic disease will present areas of apparent induration during the premenstrual phase of their cycle, and reexamination of the areas a week or so after menstruation will prove their evanescent or false nature. These are the patients who may provide an unhappy experience in the operating room for the surgeon who is unable to find the "tumor" he discovered during an examination in the florid premenstrual phase.

An invaluable aid in the recording of breast lesions generally is a diagrammatic representation of the breasts and regional nodal areas stamped or drawn on the chart, with the lesions accurately indicated by location and size according to actual measurement. If an area of induration in the breast does not completely regress in the postmenstrual phase, but by measurement exhibits distinct decrease in size, it is almost certainly non-neoplastic and requires observation only. Contrariwise, any distinct area of three dimensional induration which fails to regress postmenstrually, or even increases in size, must be excised, for women with cystic disease have a slightly higher than average incidence of mammary carcinoma.

There are two processes of involution which produce space-occupying lesions in cystic disease. One is the development of gross cysts of such size as to be palpable. They may be firm or even hard in consistency because of the tension of the intracystic fluid, and their surface is smooth, their outline sharply demarcated, and their mobility usually notable. I believe it is proper to aspirate such cysts with a 14 gauge needle and to attempt to empty the cyst completely. If there is no rseidual mass after aspiration, in 7 out of 10 patients the cyst will not refill and excisional surgery is unnecessary. If residual induration is palpable after aspiration, or if a cyst has refilled on reexamination four weeks later, excision is indicated. A small percentage of gross cysts develop neoplastic changes in their epithelial lining.

The other process producing a true lump in cystic disease is a sclerosing stromal involution, or sclerosing adenomatosis. In extreme instances the scirrhous effect is so pronounced as to produce a breast tumor indistinguishable from carcinoma, including skin attachment. The sclerosing phase simply produces a true tumor which requires excision for differentiation from cancer.

Other diagnostic aids have not been of any great value. In the author's experience, transillumination does not provide enough information to justify the procedure, and at times it can be highly misleading. Intraductal injection of radioppaque materials is not without hazard and is certainly unsuitable for more than occasional use. Accurately taken, soft tissue films of the dependent breast may be helpful in occasional instances.

An unusual form of cancer of the breast is a sarcomatous process developed in a pre-existing fibroadenoma, in which the fibroblastic stro-

mal component of this compound neoplasm produces a fibrosarcoma. Usually seen in younger women, or at least in middle life, it commonly produces a very bulky tumor without skin attachment or regional nodal involvement, and constitutes a lobulated soft to firm mass entirely unlike carcinoma.

The natural history of untreated carcinoma of the breast forms a baseline against which the results of our therapeutic efforts to modify the disease should be compared, a fact too often disregarded in clinical reporting of end results. Survival rates for untreated carcinoma of the breast, from time of diagnosis, are as follows:

3 years	40%
5 years	22%
10 years	5%

These rates are, of course survival, with disease, of the untreated cases, but it should be remembered that a few individuals and institutions also report end results in terms of survival, with and without disease. Such figures should be reduced by deducting the percentage which would have survived without treatment. Thus, a 5-year survival rate of 44% for carcinoma of the breast is, in fact, only a 22% increase in survival over the untreated, natural course of the disease.

"Cure" rates, or, more accurately, control rates, are of much greater significance, if they are based on total experience and not biased by statistical trickery. A 5-year control rate of 44% means that 44 of 100 patients treated have reached the 5 year mark without clinical evidence of recurrence or metastasis, as compared to 0% of untreated patients.

Failure to recognize the difference between clinical control and sheer survival has led some "ivory tower" statisticians to adopt a dismal view of surgical end results in cancer of the breast. Statistical evidence relating the duration of mammary cancer to its local and regional extent is as yet only a measurement of how soon a patient seks advice on the basis of a recognized abnormality, and it may be that present figures represent degrees of abnormality as a function of time, rather than any reflection of the true natural history of the disease. Nor will there be any reliable evidence on the value of early treatment until a sufficient sample of patients has come to adequate treatment solely on the basis of objective recognition of asymptomatic mammary tumors known to be of short duration. Apart from any statistical concept of "absolute" cures, the long term control of mammary carcinoma by surgical methods, both radical and palliative, is of inestimable value to society. Recurrent or metastatic disease developing 10 to 15 years after treatment may represent therapeutic failures to the statistician, and survival "with", or "without", disease for shorter periods of time may seem similar when plotted on a graph. To the clinician, however, "salvage" such as this is significant and rewarding. To the patient, and to society, it is the difference between nihilism and som measure of successful control while we await the development of more effective therapeutic methods.

A reverse attitude now current in some surgical centers, in extension of radical surgery beyond the limits of the conventional Halsted-Meyer procedure, arouses no vestige of entrusiasm in this observer. Thirty years ago Simkin was combining a radical supraclavicular dissection with radical mastectomy, and his end results were no better than with the conventional operation. There is no possible reason to believe that the modern exponents of superradicalism in this particular type of cancer will fare any better. If the neoplastic process has gone beyond the anatomic limits of curability by conventional radical mastectomy, such extension is almost inevitably evdeince of its lethal nature and of still wider dissemination beyond any possible operative areas. When the presence of metastases in the apical axillary lymph nodes is an almost invariable indication of incurability, the effort to remove disease even more proximal, by resecting ribs, sternum and clavicle, is little more than surgical exhibitionism. The same reasoning invalidates proposals for wider removal of skin with routine grafting, reflection of skin-thickness flaps and extensive dissections with operative periods up to 5 and 6 hours. In spite of these refinements Haagensen, their principal advocate, reports 5-year end results no better than most, and not as good as some surgeons, and his rate of local recurrences remains constant at 12% to 13%.

Opposing the disciples of super-radicalism are a few therapists who are moving in the direction of surgical conservatism. Most notable of these is McWhirter, who reports 5-year end results equalling those from radical mastectomy, by simple mastectomy with x-ray therapy to

the regional lymphnodal areas. Because of the natural history of mammary carcinoma, and the late recurrences possible in irradiated tissue, a comparison of end results at 10 years will be necessary to judge more adequately the value of McWhirter's program. In the meantime, his plan of treatment should be regarded as a clinical investigative project which requires further verification, and not as an indication for the abandonment of radical mastectomy as the definitive curative measure for carcinoma of the breast. A further deterring factor is that the necessarily intensive irradiation, particularly in younger women, is not without some hazard of late radiation damage.

These various modifications of conventional surgical treatment are an indication of our dissatisfaction with our inability to improve end results in this form of cancer. Much of this therapeutic frustration arises from the fact that we are dealing with a disease in which the prognosis in most patients is predetermined by a tumor-host relationship of unknown nature. This biological predeterminism is established at the very inception of the neoplastic process, long before it is capable of producing signs or symptoms. In general, therefore, natural selection is a more important determinant of end results than is early treatment. Present evidence indicates that the diversity of biological potential is such that 3 general groups can be recognized. Perhaps 40 out of every 100 patients represent an unfavorable process which is incurable regardless of time or type of treatment, while in another 25 the disease is so dilatory that regional matastases do not occur until 3 years or more after recognization of the primary lesion. In the remaining group of 35, regional metastases seem to occur during the months immediately following recognition of the breast tumor. It is this latter group in whom ablative surgical treatment, promptly employed, may yet improve significantly our end results. For this group, as well as for the indolent even though locally advanced lesions, radical mastectomy offers the only definitive prospect of control and cure of the disease.

Treatment of breast cancer calls for a high degree of judgment in selection of methods based on multiple features in each patient. As in the treatment of neoplastic diseases, generally, there are no flat rules which can be followed with slavish uniformity without prejudice to certain patients. Two fundamnetal features require careful evaluation in every patient. The first, commonly recognized as the feature of greatest import, is the clinical stage of the disease. The second, and hardly less significant though commonly ignored, is the necessity of a clinical evaluation of the growth pattern of the neoplasm. The breast is one of the most arresting examples of an organ site in which cancer exhibits a wide range of polymorphism. The vagaries of growth pattern in breast cancer range from the uniformly lethal, rapidly growing, inflammatory carcinoma of the breast to the dilatory, low grade sort of neoplasm which may produce local ulceration after 10 or more years of growth without evidence of even regional metastases.

In some 15 per cent of patients, however, there will be historical and clinical evidence pointing to a highly malignant, aggressive growth pattern, and these patients constitute a biologically inoperable group even though some of them are technically operable. The most dramatic fraction of these patients are readily recognizable as inflammatory carcinoma, found in approximately 4 per cent of all patients. These patients present a process so florid as to be mistaken frequently for acute mastitis. The remainder of the biologically incurable group usually presents other less dramatic evidence—a rapidly enlarging tumor, lymphedema of the skin disproportionate to the size of the tumor, some degree of cutaneous erythema, increased skin temperature, satellite skin nodules, extensiv axillary lymphnodal involvement with a primary tumor of small size or short duration.

The obverse of this situation, more often seen in elderly women, is characterized by a tumor of long duration, slow growth, minimum or no axillary nodal involvement, and absence of clinical or radiographic evidence of distant metastases. Such patients are frequently eligible for radical surgery with an excellent chance for cure but are denied their chance because of the extent of the local disease or because ulceration is present.

In view of these considerations, an outline for treatment can be formulated which will recognize thre clinical stages of the disease, with the intermediate stage subdivided into two groups:

Stage I. Limited to the breast, with skin involvement zero or minimum (early attachment or slight dimpling immediately over the tumor).

Stage II. (a) Clinical evidence of metastases to axillary nodes, with enlarged nodes 2 cm. or less in diameter, and discrete, with no involvement of apical nodes. (b) Avillary nodes larger than 2 cm. Axillary nodes adherent to each other or to the skin. Apical axillary nodes involved. More than minimum skin involvement, up to and including ulceration.

Stage III. Distant metastases, which includes spread to the supraclaixcular nodes.

Treatment of Stages I and III offers little difficulty, In Stage I radical mastectomy constitutes definitive treatment, and if microscopic examination fails to show axillary nodal metastases, no irradiation is indicated.

In Stage III, various combinations of x-radiation, steroid hormone therapy and palliative surgery frequently produce effective palliation for years rather than months. Unless the disease is too generalized, x-ray treatment is still more effective than are steroid hormones, with the exception of soft tissue disease in post-menopausal women, where the usefulness of estrogenic steroids is outstanding.

Stage II disease offers the most difficult area of therapeutics, and here the factor of biologic evidence of curability should be examined together with technical considerations of operability. For a 5-year period the author pursued the policy of a therapeutic trial of x-ray therapy for all Stage II cases in an effort to filter out the highly malignant, biologically incurable neoplasms which are ordinarily highly radiosensitive. This plan has now been abandoned for several reasons: the small number of radiosensitive lesions (less than 15 per cent), several weeks of delay for the majority who do require radical surgery and delayed healing in those who had more than a therapeutic trial of irradiation and still came to radical mastectomy because of incomplete regression. We still believe, however, that patients with criteria of biologically unfavorable lesions as outlined above, either Staeg II-a or II-b, should have a trial of irradiation. The trial period is short in duration (two weeks), and the dosage moderate in amount (1200 roentgens to each of three ports). If the process is thereby shown to be distinctly radiosensitive as indicated by regression of 40 per cent or more by measurement, such a degree of radiosensitivity is accepted as evidence of biologic incurability and a full course of irradiation is employed. Those lesions not proving to be radiosensitive have prompt radical mastectomy.

As to the technical division of Stage II, groups a and b constitute the favorable and unfavorable examples respectively. Ordinarily, Stage II-a should be treated in the same fashion as Stage I, by immediate radical mastectomy. Stage II-b, particularly in the face of more advanced axillary disease, or satellite skin nodules, is of ominous import. Thus the postoperative 5-year control of Stage II-a is better than 50 per cent, whereas that for Stage II-b is little better than for untreated breast cancer, or about 25 per cent. Nevertheless there are Stage II-b cases, as indicated above, where the evidence of a low growth potential is such that, even with advanced local disease, there may be no distant metastases, and uniformly to deny such patients the chance afforded by radical surgery is to lose an appreciable fraction of potential cures.

There is, then, no formal outline possible for management of Stage II-b. In every instance treatment must be selected in the light of the total evidence of the behavior or natural history of the neoplasm and its host. It is self-evident that, in women with Stage II-b extension and evidence of an aggressive, rapidly-growing lesion, radical mastectomy is invariably a futile and unnecessary surgical gesture. For such patients, palliative irradiation is the primary and usually the only necessary modality. Patients with clinical evidence of a dilatory, slow-growing tumor may be treated best by primary surgery. Cases falling between these two extremes may obtain excellent palliation for a number of years by judicious combination of both methods.

Although the evidence is contradictory, we believe that patients with Stage II disease subjected to radical mastectomy should have postoperative x-ray therapy. Such postoperative irradiation is best directed toward the regional axillary and supraclavicular areas, and, in the instance of lesions located in the medial quadrants of the breast, irradiation of the mediastinal area should be added. If the surgical procedure has been adequate, there is no reason to irradiate the chest wall and underlying lung. If local recurrence does develop later, in an unirradiated chest wall, it is possible to employ effective focal palliative x-ray therapy.

CONCLUSION

The clinician has two grave responsibilities in respect to the woman whose complaint is of the breast. Primarily, he must determine whether or not she presents a space-occupying,

or true, lump in the breast. If such a tumor be present, each patient's problem requires management based on the specific features peculiar to the individual rather than an adherence to any set of rules.

TABLE I

Approximate Incidence of Mammary Lesions

Cystic Disease	60%
Cancer	20%
Fibroadenoma	15%
Curiosae Mammae	5%

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FRACTURES

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The title of this paper may seem to be a rash statement,—which needs verification. In the face of all the refinements of radiologic technic, making visible any of the hollow structures of the body, as well as many of the solid organs,—in such fields as angiography, encephalography, bronchography, pyelography, salpingo-uterography, and many others, the suggestion that the diagnosis of fractures is more difficult seems to call for a liberal sprinkling of salt. The belief is almost universal that any doctor can diagnose fractures; that, possibly, intricate procedures should be referred to the hospital where a qualified radiologist will carry them out, or to a radiologist in private practice,—but fractures,—nothing to it!

Much evidence could be offered in support of the statement as to the difficulty of correctly and accurately interpreting bone and other tissue changes produced by injury and shown by x-ray, but time will permit brief discussion of only four or five points.

1. The investigation of the skeletal system by means of its x-ray shadows requires a more detailed knowledge than does any other system in the body. This knowledge must cover not only the anatomy, but also the physiology and pathology of the bones and joints. Bone is ordinarily regarded as a fixed and stable tissue, subject to few, if any, changes after attaining full growth, unless injured. But this is a mistaken idea. Osseous tissue is quite labile, not only constantly changing during the growing years, but also subject to many variations in structure, density or contour throughout adult life and, finally, to senescent demineralization and the changes resulting therefrom. We do not ordinarily think of bone as having a physiology which needs to concern us. But the physiology of bone is almost as complicated as that of the liver, and knowledge of this, especially the physiology of bone repair, is necessary to the study of fractures by means of x-ray.

2. In the interpretation of x-ray findings following trauma, especially when adjacent to joints, a thorough knowledge of the peri-articular structures is necessary. The simple observation that a fracture is or is not shown, and if present, whether there is displacement of the fragments or not, is but the beginning of the radiologist's responsibility in examining the injured part. The character of the injury needs to be known to the radiologist and to be evaluated by him; that is, whether a strain, twist, direct blow, or a fall, and the direction and severity of the traumatic force applied. The radiologist has a mental image of the supporting ligaments about a joint and uses the information as to the kind and severity of the trauma to deduce what must have happened to those structures not directly shown on the x-ray film. For example, consider the examination of an ankle joint following an injury. Whether fracture is shown or not, consideration must be given to other possible injuries. From the nature of the injury, from the vulnerability of the soft tissues, from slight changes in joint spaces or joint relations, decision should be reached regarding the likelihood of rupture of ligaments supporting the ankle joint or diastasis of the tibio-fibular interosseous ligament. This latter is usually more serious and crippling, and less likely to undergo functional repair than fracture of the malleoli. Similar situations exist with regard to other extremity joints, where injury to supporting ligaments may be deduced from changes in soft tissue densities, or slight changes in joint spaces. More and more often comparative views of the opposite uninjured joints are required for accurate evaluation of a joint injury.

3. A knowledge of the physiology of bone repair is necessary in forecasting what is likely

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to happen following fracture of the shafts of long bones. Bone repair will take place chiefly, if not entirely, by proliferation of the osteoblasts of the periosteum. This is easily demonstrable in the distribution of callus two or three weeks after a fracture. If the fracture and displacement are of a character which must necessarily strip the periosteum from the surface of the broken shaft, and if this loose periosteum is not replaced in the reduction of the fragments, non-repair is very likely to result. Of course, these facts are well known to orthopedists and general surgeons who handle many fractures, but when fractures are being taken care of by general practioners, the radiologist may need to indicate whether the periosteum probably has been stripped back, and to issue a warning that union will be doubtful with closed manipulation, even when the fragments are reduced into good end to end position, as shown by x-ray.

4. A knowledge of the appearance of vascular channels in bones and of other normal lines which can simulate fracture, not only in the cranial bones but also in extremity bones, is a part of the radiologist's training, but often leads the infrequent observer into difficulty. This would seem to go without saying, but in one court case, based on a head injury, where the erroneous interpretation of the occipital suture as a fracture had been made, it required the combined testimony of most of the radiologists in Phoenix to convince the jury that this interpretation of a normal suture line was a mistake. Other cases have given trouble to the Industrial Commission, or have reached trial courts, with similar misinterpretations by general practitioners of vascular grooves or suture lines as fractures. It is exceedingly difficult ever to convince a patient who has had a diagnosis of fracture of the skull or spine, made on the basis of x-ray films, that such is not the case. Always the doctor who says there IS a fracture is right, no matter how inexperienced he may be in the interpretation of x-ray findings, and all doctors who say otherwise just do not know their business, no matter how expert and experienced they may be. This is human nature, and we cannot blame the patients.

It does not follow that a doctor must be a certified radiologist in order to make accurate interpretations of fractures or any other conditions which can be investigated by x-ray methods. Many orthopedists, industrial surgeons, and specialists in other fields can and do interpret x-ray findings in their limited specialties, and often as expertly as the radiologists do. The point aimed at in this paper is that fractures do not constitute a field in which just any doctor can feel himself competent. A urologist may be well versed in the minutiae of visualized pathology in the urinary tract and still be lost in studying the markings in the cranial vault, or a bone shadow which might or might not be a fracture. Likewise, the neurosurgeon may be expert in the interpretation of encephalograms, or the chest specialist in reading films of the lungs, and be wholly unqualified to say whether a cervical spine fracture is present or not.

Shortly after the establishment of the Industrial Commission of Arizona they adopted the policy that the Commission would pay for x-ray examinations only when these were made by doctors whose competency to interpret the findings had been established. This was the rule when the Industrial Relations Committee was formed. I served on this committee and as its secretary for eight years, and have records of actions by the Committee wherein they advised the Commission to refuse payment of bills submitted for x-ray examinations, because competency to make such examinations by the doctors involved had not been established. One practitioner in Phoenix installed an x-ray machine with the avowed expectation of reaping a harvest making x-ray examinations of his own industrial cases, only to be informed by the Commission that they would not honor his bills for those services. The Medical Referee of those days assembled a long list of mistakes in diagnosing bony anomalies as fractures, these errors being made by practitioners who were not familiar with the appearances on x-ray films of anatomical peculiarities and anomalous variations in the skeleton. Of late years the Commission seems to have relaxed this policy and the only required evidence of competency to make reports on x-ray examinations now appears to be the possession of an x-ray machine and the ability to employ a technician to turn out the films. They now accept the reports of any doctor who can write "M.D." after his name, and even from some osteopaths and chiropractors.

5. A final reason for this paper's contention has just been discussed in part. That is, the

occurrence of many bony anomalies, anatomical variations and individual peculiarities in the skeleton, which must be kept in mind by the radiologist and correctly evaluated by him. The anomalous bones of the wrist and foot were discussed by me in a paper published fifteen years ago. They continue to be troublesome and mistakes in interpreting them continue to come to our attention. The anomalies in the spine have been reported by many writers and are well known to radiologists, though not universally recognized by the infrequent observer. In the dorsal spine the juvenile epiphysitis of Scheuermann will often result in ununited epiphyses at the anterior angles of the vertbral bodies. This, along with the slight anterior wedging of these bodies due to the rounding of the spine, which is a part of the disease, has been misdiagnosed fracture on more than one occasion. In the lumbar spine the same thing occurs though usually without the wedging or rounding which is common in the dorsal area. Such ununited epiphyses on the lumbar vertebrae can be single or multiple. They are more likely to be confusing when single, and several instances of this anomaly have gone to industrial hearings, to the Medical Advisory Board, or to the Supreme Court, through mistaken diagnoses of this anomaly as fracture. Recently a case was being evaluated by the Industrial Commission, where such an ununited vertebral epiphysis had been diagnosed as fracture by an osteopathic x-ray interpreter, the patient placed in a cast and kept so for two months in an osteopathic hospital.

A somewhat similar condition is the os acetabuli, or separate epiphysis at the upper lip of the acetabulum. This comparatively frequent anomaly has given trouble on more than one occasion,—when first noted following a hip injury, especially a dislocation. In one industrial case, with persistent symptoms after a hip injury, surgical removal of the bony particle was attempted. This was not successful and the fragment was still present after the surgery. However, the surgery cured the symptoms!

It is manifestly impossible, in a short paper, to give many illustrations of the difficulty in negative or positive interpretation of fractures. Some have already been mentioned, and a few more will round out this paper.

In children any injury about a joint and involving the epiphyses can readily be missed, if the epiphyses are still in cartilage. However, careful attention to soft tissue densities with due consideration to the history and evident disability, along with comparative views of the uninjured side, will usually enable the radiologist to reach a conclusion as to whether or not an epiphysis, such as the internal epicondyle of the humerus, has been separated.

Of the supernumerary bones of the foot, the os trigonum, or separate posterior process of the talus, has given difficulty in many cases. That and the still ununited epiphysis of the proximal end of fifth metatarsal have often been mistaken for fractures in my experience. The subdivided sesamoid of great toe and the bipartite patella have been misdiagnosed as fracture in several instances which came later under my observation. In one notable case studied by the Industrial Relations Committee some years ago, a divided sesamoid of the great toe was removed surgically at considerable cost to the Industrial Commission for surgical fees, plus the compensations for disability which was, in the opinion of the Committee, due chiefly to the ill-advised surgery.

The injuries which cause me to scratch the head oftenest are those involving the hands and feet. I am convinced that there are bone injuries which leave the cortex intact, at least so far as routine views will show, and yet the interior structure of the bone may be disrupted and its cancellous tissue broken down. Usually in a March fracture, with films showing fine detail, a hairline fracture can be made out, but sometimes even this is not visible and the bone injury becomes manifest only after callus has formed in the healing process. The term "occult fracture" has been used in some reports and seems justified. Injuries at the ankle have been observed where the fine structural detail of the external malleolus is disrupted without a visible break in the cortex. In such cases, comparison views of the opposite normal ankle will show a difference in the structural bone detail. Meticulous care is required in making films to bring out the fine detail of the bone structure.

A hairline fracture through the lip of a phalanx at one of the interphalangeal articulations can easily be missed. On the other hand, a small sesamoid bone in the same localities can be misinterpreted as fracture.

The ulnar styloid existing as a separate bone, or remaining united after an old diastatic sepa-

ration sometimes presents a difficult problem. Anomalous bones distal to the malleoli are sources of considerable worry to the radiologist and to the attending surgeon, when a patient has sustained an ankle injury and there is a perfectly obvious bony fragment lying separate and just where the patient is most tender. That is the sort of situation which makes the radiologist's days interesting and his nights haunted by visions of possible mistakes.

The practitioner who thinks that a correct diagnosis regarding possible fracture should follow as a matter of course in any x-ray examination finds it difficult to excuse an error by a radiologist, in this field. However, I feel safer in interpretation of lung shadows, diagnosing ulcer of stomach or duodenum, drawing conclusions from pyelograms or cholecystograms, measuring the heart size or estimating pelvic diameters in a pregnant woman,—than I frequently do in saying whether there is or is not a fracture in many extremity, spine, rib or head examinations. So, be patient with the humble radiologist, if he says a mashed finger is not fractured and two weeks later revises his report, because callus developed!

RADIATION THERAPY IN THE TREATMENT OF CARCINOMA OF THE CERVIX AND UTERUS

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Let us first define radiation. Radiations are divided into two main groups—(1) corpuscular and (2) electromagnetic. Corpuscular radiation is composed of particles such as electrons, protons, neutrons, helium nuclei or alpha particles, traveling in a stream. The chief sources of these as used in therapy are radioactive elements or isotopes; examples of the farmer being radium and examples of radioactive isotopes commonly used being P 32, I 131, and cobalt 60. For deep seated malignancy, the other sources, cyclotron and betatron. Alpha and beta particles are not used except experimently. Electro-magnetic radiation consists of wave motions traveling at the same speed as light, of the same nature as light, and differing only in the length of the waves.

I would like next to consider the way in which radiation acts. First let us consider radiation effects on the cell. The cell nucleus is affected more than the cytoplasm. Gross structural changes occur in the chromosomes and gene mutations are caused. Mitosis is arrested and degeneration may occur when the cell attempts division or even when it is in the resting stage. Differentiation may occur in resting cells. For example, cells irradiated in their resting period may react as follows: if the dose is sufficiently high some resting cells degenerate promptly; at lower doses the cell might degenerate on attempting division where it might be unable to initiate division in which case one or two alternatives occur. Either the cell enlarges grossly and ultimate dies, or it differentiates, in which case a more physiological death occurs. By any of these processes the active growth in irradiated tissue can be permanently arrested. The work done by Glucksman in 1941 on irradiated tumors showed that only those tumors hibited this as irradiation effect. Carcinoma of the cervix varies in the amount of initial differentiation which is present and varies in its response to radiation. We believe that if biopsy specimens are taken after treatment and show a rising proportion of differentiation of the cells and the absence of mitoses the prognosis is likely to be good. Death through differentiation does not occur in tumors which are normally undifferentiated, for example, basal cell carcinoma. However, such tumors are often radiosensitive. Serial biopsy has proven to be an important method of following the reaction of tumors to radiation. For example, in early cases without secondary nodes failure to respond might be taken as an indication for immediate change in the treatment. The next radiation effect on the cell is metabolic. As everyone knows the respiration of a malignant cell is entirely different from that of a benign cell. In regard to nucleoprotein metabolism it has been found that the site of breaks in the chromosomes of Drosophila melanogaster sperm following radiation is not random but that breaks occur with greater frequency in the deeper staining portion where desoxyribounucleic acid is concentrated. Radiation can alter

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the nucleic acid of the chromosomes, and this alteration is responsible for the stickiness of the chromosomes seen when the cell is irradiated during division. It has been shown that radioactive phosphorus (P 32) is taken up very rapidly by the nuclei of cells which divide frequently.

Factors which modify radiosensitivity are as follows: The dominant extrinsic factor is the circulation, the maximum effect being obtained in the presence of good circulation. Sensitivity is decreased with decrease in oxygen. Cold in most instances decreases sensitivity, probably by depressing respiration or mitosis. Other factors are as follows: the extension of overall time of administration diminishes the effect of radiation in most biological materials. The intervals between dosage fractions are important. That is, when radiation is given in divided doses thereby catching more and more cells during their mitoses. The most sensitive phase of the mitotic cycle seems to be the pro-phase or immediately preceding this period.

Cancer of the cervix

This is the second most common form of cancer in women, following breast. Jewish women who are not immune to other forms of cancer present a very low incidence of carcinoma of the cervix. It usually occurs in women who have borne children. The areas involved are as follows, in their order of frequency: posterior lip, before cervical canal, before anterior lip. The types are (1) ulcerating, (2) polypoid (which usually has the best prognosis) and (3) nodular. The spread of carcinoma of the cervix is in three distinct directions: (1) to the fornices and vaginal wall, (2) to the body of the uterus, and (3) to the parametria. It may invade the bladder, the rectovaginal septum, the vulva, uterosacral ligaments, etc. The lymphatic spread is to the external iliac nodes, inguinal, hypogastric, sacral and para-aortic nodes. Distant, blood borne metastases are not common but do occur. Histologically epidermoid carcinoma is the most common with adenocarcinoma amounting to less than five per cent of total occurrences. One method of classifying carcinoma of the cervix, clinically, is according to the League of Nations classification, as follows:

Stage I. Irrespective of size, character or secondary infection the tumor is strictly confined to the cervix.

Etage II. The parametrium is involved and infiltrated on either side but the involvement does not reach the pelvic wall and according to most authorities involves only the medial half. The vagina may be involved but not its lower third. The corpus of the uterus may be involved through the endometrial canal.

Stage III. The tumor invades the parametrium for its entire length on one or both sides and on rectal examination the examiner will be unable to place his finger between the tumor and the pelvic wall. The vagina is involved in its lower third. Isolated pelvic metastases against the pelvic wal, irrespective of the extent of the primary growth, are present. Pelvic lymph node metastases may be felt on rectal examination.

Stage IV. Frozen pelvis, or involvement of the bladder or rectovaginal septum, or the presence of distant metastases. Special examinations apart from biopsy of the lesion should include, when possible, pyelograms and cystoscopy. Numerous figures have been published on the results of therapy. I do not wish to belabor you with numerous statistics reported from various centers; suffice it to say, the prognosis in carcinoma of the cervix is bright, when compared to other primary carcinomas. The overall percentage for all four stages reported by some centers is as high as 35 per cent with an average for Stage I of 75 per cent, Stage II, 50 per cent, Stage III, 25 per cent and Stage IV, 5 per cent. It cannot be sufficiently emphasized that a Stage II carcinoma of the cervix has a better prognosis than an operable carcinoma of the stomach, which has a five year survival rate of less than five per cent. Some apparent Stage IV cases are actually so classified due to the presence of infection and inflammatory changes simulating a higher stage.

To return to the therapy of carcinoma of the cervix, carcinoma in situ, of course, can be treated either by radiation or surgery, a very difficult point being that it is difficult to truly evaluate whether the carcinoma is entirely confined to the cervix itself. Meigs of Boston has reported over 100 cases, carefully selected, in which he has, to the last of my knowledge, 100 per cent cures with no mortality. Stage II, III and IV are definitely radiation problems to begin with. However, one of the chief points of this paper is to bring forth the point that surgery with careful panhysterectomy *lymphadenectomy* can, in many cases, help these later

stages more than has been previously thought. Although the primary tumor of the cervix can be definitely eradicated by optimum irradiation, i. e., a combination of radium and x-ray therapy, I do not believe that malignant nodes distant from the cervix either in the lateral wall of the pelvis, bifurcation of the iliacs, or at the aorta, or even higher in the body, are usually sterilized, in the crossfire technique of irradiation the maximum dose is delivered to the carcinoma of the cervix itself with the normal tissues receiving a much less total dose of irradiation. This is difficult to do with nodes in the lateral wall of the pelvis or higher since the normal tissues will obtain a very high dosage and also since crossfire technique is not feasible. Many times a carcinoma of the cervix at the primary site has been cured to find that the patient dies of metastases at a later date. The patient may return for examination and the clinician finds the carcinoma cleared up locally, and yet the patient goes steadily downhill with metastases. For this reason I feel that the combination of radiation and surgery should be used whenever possible. Stage II or Stage III carcinoma of the cervix may be helped considerably by surgery following optimum radiation. Of course, the more drastic operation of Brunschwig or pelvic exenteration or evisceration can be resorted to and has been don successfully. I, therefore, hold no flaming torch to say that radiation is *the* treatment.

The science of irradiation in the treatment of carcinoma of the cervix and uterus has been greatly improved in recent years. X-ray dosage used to be given according to the number of minutes and even to the present radium dosage is often given in milligram hours. It used to be said that one could not add the roentgens or r of x-ray and radium since it was like adding oranges and lemons and trying to give a total in one or another. However, this has been disproven since both x-rays and gamma rays belong to the electromagnetic spectrum, the only difference being that with the usual type of x-rays available the wave length is much longer than that produced by radium, the latter being approximately equivalent to that produced by two million electron volts. X-rays being utilized in treatment are produced at from two hundred to four hundred kilovolts or even at a million volts. Some centers have, of course, the larger experimental machines of several million volts. The reason that these rays can be added quantitatively in dosage summation is the fact that after the first scatter of the ray in the tissue it has been proven scientifically that the wave length of radium's gamma rays approaches that of x-rays, and as far as we know, it is not the quality or wave length or frequency of the beam that matters as much as the actual dose absorbed by the tissues.

In treatment of carcinoma of the cervix let us consider the different points: Point A is at the paracervical triangle or where the uterine artery crosses the ureter and this area receives around 7000 r, adding gamma and x-ray r. Thus it is seen that with the cancericidal dose being approximately 6000 r this is quite adequate for the elimination of cancer at this point. Point B is on the lateral pelvic wall at the site of the obturator node. It receives much less than this, the total dose being less than cancericidal. However, the cervix itself receives from 10,000 to 15,000 r being the point of concentration of the therapy. Transvaginal or intravaginal therapy has been used by many centers and certainly can supplemen tthe dosage mainly to the cervix and to a lesser degree to the parametrium. However, I do feel that radium with its 2,000,000 volts quivalent type of electromagnetic wave is still the treatment of choice. May I say at this point if the patient has a large, cauliflower, fungating, infected lesion, external therapy should be given first to decrease the size of the tumor. However, if the tumor is ulcerating and radium can readily be applied, maximum dose can be given most quickly with radium therapy, and in this latter type, it is the method of choice in beginning therapy. Some of the complications arising are due to secondary infection such as a pelvic cellulitis, peritonitis, or pyometra. Pyometra may be present when therapy is begun. That arising during treatment, particularly with radium, indicates the immediate discontinuing of therapy and packing until drainage has been established and the patient has overcome the infection. As is well known one of the most common causes of death in carcinoma of the cervix is uremia, due to involvement of the urinary tract either by malignancy or to a lesser degree by radiation changes or both. Radiation sickness such as nausea with or without diarrhea does occur in some patients. The skin reaction is to be expected. I exhort you to refer to it as "reaction" rather than a "burn", since the former indicates an intentional

and normal change in the eyes of the public whereas the word "burn" seems to imply that too much radiation has been given, which is far from true. Factitious proctitis may occur with radiation therapy. Rectovaginal or vesicovaginal fistulae may occur either due to penetration by the carcinoma or due to radiation. Of course, in many instances carcinoma having involved the adjacent areas and being destroyed will naturally leave a dehiscence between the adjacent structures. Avascular changes in the femora with pathological fracture appear to be much less common than previously thought according to the experience of the big centers of therapy, the literature, and my own experience.

Carcinoma of the cervix in pregnancy.

In the first half of gestation the fetus should be sacrificed in the interest of the mother. When this decision is reached, treatment should be started by external deep therapy just as in carcinoma of the cervix in a non-pregnant uterus. After a period of four to six weeks a therapeutic abortion occurs in most cases. When this does not take place a dilation and curettage should be performed. At this stage when therapy is directed to protect the life of the child at the rick of the mother, it results often in the loss of the lives of both. During the second half of gestation, it is generally accepted that an effort can be made to preserve the life of the child without endangering the life of the mother, or without reducing appreciably her chances of survival. Procedure generally consists of preliminary intravaginal application of radium since the relative distance of the fetus from the cervix is greater than during early pregnancy. If the diagnosis of carcinoma is made during the 5th or 6th month of gestation it may be best to wait a month or six weeks before radium is applied. Following the application of radium a cesarean section should be done as soon as the child is viable; or radium may be applied while awaiting the viability of the child and then a cesarean performed followed by hysterectomy. If anyone has any doubts about this method of treatment I think the Golden Rule may be applied and consideration given to what one would do if the patient were one's wife or mother. Certainly, this would be of great help in deciding the best type of therapy indicated.

As for a few miscellaneous points in the therapy of carcinoma of the cervix the tandem with stem type of applicator and vaginal colpostats is the most common method used. Interstitial needles are being used at a few treatment centers.

Carcinoma of the uterus.

The lymphatic drainage of the uterus is quite similar to that of the cervix and terminates in the para-aortic, paracaval, external iliac and inguinal nodes. The classification of the extent of the disease is as follows:

Stage I. Tumor limited to the surface that has not yet invaded the muscle.

Stage II. Definite involvement of the myometrium.

Stage III. Invasion of the serosa.

Stage IV. Extension outside of the uterus.

The microscopic pathology finds adenocarcinoma the dominating type. There is, of course, rarely a sarcoma arising from a leimyoma. Grading of the pathological types are as follows:

I. Papillary adenoma which is a superficial growth and entirely papillary.

II. Adenoma malignum with no tendency to form solid masses or infiltrate the stroma.

III. Adenocarcinoma, solid masses, tendency to infiltration of the stroma.

IV. Embryonal, anaplastic, or diffuse carcinoma.

There is a rare adenocanthoma which represents mixed features of epidermoid carcinoma and adenocarcinoma. An additional clinical classification of Bowing and Frick is as follows:

Stage I. Uterus not enlarged and movable.

Stage II. Uterus enlarged but movable.

Stage III. Limited mobility, uterus enlarged and fixed with infiltration of the parametrium; uterus enlarged or not with involvement of the cervix.

Stage IV. Uterus enlarged and fixed with evidence of pelvic metastases.

I think everyone will agree that the essence of treatment of carcinoma of the fundus is surgery. The main point of difference is whether or not radiation should be used. It is true that different centers report different results. Heyman of Sweden initiated the multiple capsule method of radium application. This consists of small metal containers holding eight to ten milligrams of radium element with filter of approximately one millimeter equivalent of lead. These are retained on the ends of long, stiff wires, and are either numbered or lettered alphabetically, A, B, C, D. The uterus is packed with these

multiple capsules so that the ends of the wires and their letters, or numbers, protrude from the vagina. In the removal of these capsules one must start with the last one inserted or a "log-jam" will result. This gives a very homogeneous distribution of radiation to the malignancy and is preferable to external radiation except in thin patients. This multiple capsule method of radium exposes the malignancy to the equivalent of 2 x 10^6 volt x-ray therapy in immedate juxtaposition. Some surgeons may say, "Why bother with irradiation at all before hysterectomy?" It is true that in Stage I or Stage II where the carcinoma is limited to the uterus irradiation is probably not necessary, but one cannot always be sure of the exact stage before surgery. However, radiation does tend to clean up any infection, obliterate lymphatics and possibly may convert a Stage III or Stage II into a lower stage. Of course, in the more advanced stages external radiation, as in Stage IV of the cervix, is a preferable method of treatment initially. Hysterectomy at the end of four weeks post radiation is the usual routine. Again I mention that radium inside the uterus is preferable, especially by the multiple capsule method, to external radiation since the dose is more homogeneous and more effective. Heyman found in a series of 698 cases that 52% were alive and without evidence of disease at the end of five years. In a series of 316 patients with his improved method 65% were alive and without evidence of disease at the end of five years. Ferris of the Division of Surgery of the Mayo Clinic at Rochester, Minnesota, has been using a combination of radium, x-rays and surgery, for the treatment of cancer of the fundus uteri.

To conclude, may I say that in the gloomy picture of carcinoma one of the brightest spots is found in the treatment of carcinoma of the cervix and uterus. Although the pendulum has been swinging from surgery to radiation, back and forth, over a number of years, the combination of the two, it is felt, will eventually prove to give the highest five year survival rate. Surgery for Stage I carcinoma of the cervix and for carcinoma of the fundus is well established. May I make the plea for surgery in case of carcinoma of the cervix, Stage II and III, when the primary site is apparently eradicated by radiation. Malignancy in the adjacent and peripheral lymph nodes still lurks and will spread and eventually kill the patient unless removed.

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PHOENIX *Clinical* CLUB

MASSACHUSETTS GENERAL HOSPITAL CASE NO. 36322

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

First admission. An eleven-month-old boy was admitted to the hospital because of torticollis of about seven months' duration.

The patient was born uneventfully, without instruments, after seven hours' labor. The mother's health during pregnancy had been good. The infant appeared normal at birth, and his feeding and early development were normal. At about three or four months of age, it was first noted that the head was tilted to the left, with rotation of the chin to the right. This condition gradually became worse despite treatment with a supportive collar and passive stretching exercises.

The family history was noncontributory.

Physical examination showed the patient to be well developed and well nourished. The head was inclined to the left about 45° from

the vertical plane, and the chin was turned to the right. This posture was maintained on flexion and extension of the neck. The right sternocleidomastoid muscle was thin and lax, and the left was well developed and somewhat shortened but not especially tense. The left posterior neck muscles were likewise thought to be shortened. The spine and limbs were normal, as were the tendon jerks and the abdominal and plantar reflexes. There were no other physical or neurologic abnormalities.

The temperature, pulse and respirations were normal.

Examinations of the blood and urine were normal. X-ray films of the cervical spine showed questionable widening of the vertebral canal, but no other abnormality. Skull films were not entirely satisfactory but appeared normal. On lumbar puncture (on two occasions) clear cerebrospinal fluid under normal pressure was obtained. The fluid contained no cells and 71 mg. per 100 cc. of total protein. Electric stimulation showed the left sternocleidomastoid muscle to contract much more strongly than the right. Electromyograms showed constant activity in the left neck muscles but no evidence of a lesion of a lower motor neuron. Under general anesthesia movements of the cervical spine were found to be unrestricted. The optic disks and retinas, likewise examined at this time, were normal. Myelography wth iodized oil and with air disclosed no subarachnoid block and no abnormality of the spinal cord. An electroencephalogram was normal.

The patient was discharged with a corrective collar and recommendations for exercises and was followed in the Out Patient Department.

Second admission (three months later). The patient had remained in good health, but the abnormal posture of the head persisted unchanged. He was readmitted to the hospital for further study.

Physical examination showed the patient to be somewhat undersized and fretful and irritable. The tilting and rotation of the head were as before. He could walk only with assistance, with a broad-based, unsteady gait. He could stand unsupported but unsteadily. Physical and neurologic findings were otherwise unchanged.

Lumbar puncture demonstrated a clear fluid under a pressure equivalent to 200 mm. of water and containing 4 lymphocytes per cubic millimeter and a total protein of 160 mg. per 100 cc.

A repeat x-ray examination of the cervical spine showed no change. After several examinations, rendered difficult by the patient's inability to cooperate, it was decided that ocular fundi and eye movements were normal. Air myelography and pneumoencephalography were carried out. No abnormality of the cervical spinal canal or cord was seen. The lateral ventricles were considerably enlarged and the fourth ventricle was displaced forward of its normal position.

On the twenty-ninth day an operation was performed.

DR. JOHN A. EISENBEISS:

The case today concerns an 11-month old boy who presents rather typical symptoms suggesting a cerebellar or posterior fussa intracranial lesion which was of seven months' duration. The general summary of his history is nonrevealing with the exception of a torticollis which was first noted between three and four months of age. It was noted that the head was tilted to the left and the chin rotated to the righ. This is fairly suggestive of a left cerebellar lesion. Because of a suspected torticollis the patient was treated orthopedically with no benefit. Electromyographic studies revealed constant electrical activity in the left cervical muscles but no evidence of lower motor neuron lesion ruling out an anterior horn cell disease but not a compressive lesion of the upper cervical nerves or spinal accessory nerves. At the time of the original examination no abnormalities were noted by myelographic or pneumoencephalographic procedures and an electroencephalogram was normal. The x-rays which were obtained were not entirely satisfactory according to the protocol with the exception of questionable widening of the vertebral canal of the cervical spine and normal appearing skull films. Of interest in cerebellar tumors in children is the fact that the inion is frequently displaced upward. This was not mentioned as a negative finding. The one abnormality which should have and did arouse suspicion of an intracranial lesion was an elevated spinal fluid protein. Three months later the child was re-admitted for further study and definite evidence of progression of the posterior fossa lesion had developed. He now had difficulty in walking and typical cerebellar type of gait. In that the upper extremities were not involved, this is very suggestive of a midline

lesion of the vermis. In addition to this the spinal fluid had now changed in that the pressure was up and the protein had elevated to 160 mg., definitely suggesting block. Repeat x-rays were obtained and occular fundal examination was obtained. No significant findings were noted. Air myelography and pneumoencephalography was carried out and definite abnormality was noted showing displacement of the 4th centricle forward, again, consistant with a midline or vermis lesion.

It would appear to this examiner that there is little doubt but what this child has a posterior fossa neoplasm in spite of the absence of papilledema; in spite of no evidence of hydrocephalus other than that noted on pneumoencephalographic findings. I personally would have been a trifle hesitant to have done pneumoencephalography rather than a ventricle study with the spinal fluid pressure of 200. However, in the absence of papilledema it apparently was a safe procedure.

Of major import in the diagnosis of cerebral tumor in childhood or adulthood is a high suspicion factor, and because of the general opinion in the past in regard to the frequency of a cerebral tumor, this suspicion factor has been low in the general practitioner.

The older pediatrician regarded a brain tumor as a great rarity in infancy and early childhood, but because of more intensive study and the introduction of diagnostic aids such as arteriography and ventriculography which permit more accurate diagnosis it is now clear that brain tumors are almost as common in childhood as in adult life. Cushing's original figures suggested that but one sixth of all intracranial neoplasms occurred before the age of 15. Experience of neurosurgeons since this time suggests that this is a definite underestimate. Gliomas constitute about 75% of all intracranial tumors of childhood whereas they constitute approximately 40% of tumors in adult life. Approximately 65% of all brain tumors giving rise to symptoms before the age of 15 years are found in the cerebellum. It is of interest that during adult life the percentage of cerebellar tumors steadily falls and that of supratentorial or cerebral growths slowly rises, so that in old age cerebellar tumors are infrequent. General over-all ratio of brain tumors as to location is cerebral 5, pituitary 2, cerebellar 1, cerebellopontine angle 1, brain stem, 1/10th percent. The age distribution of gliomas in 0-15 about 80%; 15-30 years, 67%; 30-45 years approximately 95%; and 45-60 approximately 45%. The tumor type in the age group of 0-5 years is in order of frequency; astrocytoma, which is rather leisurely growing, the medulloblastoma, which is a rapidly growing tumor, the ependymoma, and hemangioblastoma, the latter being very rare in childhood. In the astrocytoma as a general rule the symptoms are of one year or more duration, prior to neurosurgical evaluation. Other conditions which must be considered in evaluating a posterior fossa lesion are platybasia or basilar impression which is unusual at this age, some of the degenerative diseases of the cerebellum such as Schilder's disease which seems most unlikly, neoplasms of the cranial nerves in this area neurofibroma of the 11th cranial nerve. Sarcomatosis of the meninges may occur in this age group and also infiamatory conditions. However, all of these I feel, can be ruled out and the question is which portion of the cerebellum is involved and what is the tumor type.

The first differentiation which must be made is whether or not this is an intracerebellar tumor or a surface lesion. From the course and history and findings noted on x-ray one must assume that this is an intracerebellar tumor.

Of the intracerebellar growths one must differentiate between a median and lateral growth. The symptomatology in the case under discussion today is most suggestive of a laterally placed growth, a growth involving the left cerebellar hemisphere. There are some findings which are not in accord with this supposition; namely, the ataxia involving both lower extremities and no mention of ataxia or cerebellar findings relevant to the upper extremities. The syndrome of the vermis is characterized by ataxia of both lower extremities, inconstant nystagmus of no localizing value and either hypotonia or hypermetria of both sides or one side alone. The laterally placed growths usually have findings which tend to localize the neoplasm to one or the other side. In the case under question the tilt of the head to the left and the rotation of the chin to the right are most suggestive of a left cerebellar hemisphere lesion. Apparently there was no evidence of nystagmus. As a general rule the nystagmus when present is slow and of larger amplitude when the eyes are deviated to the side of the lesion. The usual findings which occur late in the course of cere-

bellar tumors such as vomiting and headache and obvious hydrocephalus, suture separation on x-ray are not mentioned in the protocol. Some obstruction to the flow of spinal fluid must have occurred in the presence of the elevated protein.

The first symptom noted was the head tilted to the left. This was present 10 months prior to surgical procedure and is most consistent with a left cerebellar hemispheral lesion. The limitation of the ataxic manifestations as described in the protocol in the lower extremities suggests midline lesion. The elevation of cerebrospinal fluid pressure and the elevated protein suggest a neoplasm which is interfering with the circulation of the cerebrospinal fluid. The pneumoencephalographic studies as desscribed are consistant with midline tumor in the roof of the fourth ventricle. No mention is made of any deviation of the 4th ventricle in the anterior posterior projection which I am sure were taken. The differentiation of astrocytoma from medullo-blastoma or ependymoma or hemangioblastoma is most difficult. However, there are a few things in the protocol and in the duration of the patient's illness which might be of value in differentiating these four tumor types. First the absence of papilledema and the 10-month duration of illness prior to surgical intervention are against a medulloblastoma which is usually a more rapidly growing lesion. Generally other cranial nerves are involved by this neoplasm which tends to seed itslf into the subarachnoid spaces both in the posterior fossa involving cranial nerves and in the spinal subarachnoid space involving spinal nerves. No evidence of this is noted from the protocol. The duration of symptoms would appear to this examiner to be more in favor of an astrocytoma of the left cerebellar hemisphere, a cystic lesion which many of these are. An ependymoma which originates within the fourth ventricle and possibly in one of the lateral recesses could well explain the patient's symptomtology; however, it is more likely to occlude the lateral recess and fourth ventricle. Hemangioblastoma is very rare in childhood but could produce symtoms in accord with the patient's symptomtology as described. As a general rule polycythemia is an accompanying finding and very frequently there are retinal angiomata which are readily visualized on ophthalmoscopic examination.

My diagnosis will be cystic astrocytoma, left cerebellar hemisphere.

DIFFERENTIAL DIAGNOSIS

Dr. Ralph A. Ross*: In summary, an infant born perfectly normal, without any evidence of abnormal stress first showed signs of torticollis at the age of three months. A diagnosis of local muscle disease—a congenital or traumatic injury to the sternocleidomastoid muscle with shortening—was made and the proper treatment of stretching the muscle and maintaining the head in good position was instituted. At the age of eleven months there had been no improvement in this condition. There was, however, no evidence of other neurologic deformity on admission to the hospital. There was definite increased activity on the affected side and laxness of the muscles in the opposing group that was apparently considered due to the constant stretching. There was free mobility. X-ray films of the spine and the skull was taken at that time. Do you have those films Dr. Wyman?

Dr. Stanley M. Wyman: These are only reasonably good films of the skull, but the skull seems to be normal in contour and without evidence of increased pressure or widening of the sutures. The spine curves toward the left, and I believe there is a suggstion of some widening of the cervical canal both anteroposteriorly and laterally. Unfortunately, the films of the later examinations, the encephalogram and myelogram, are not at hand.

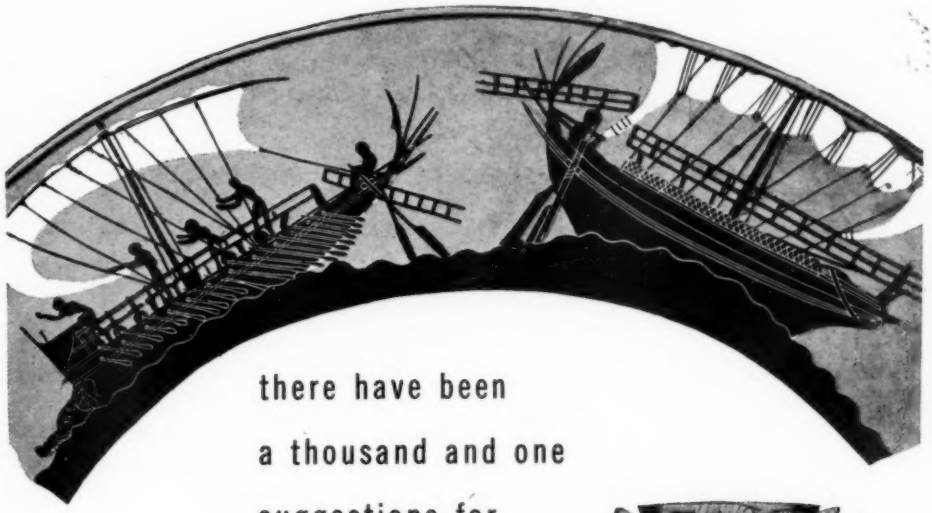
Dr. Ross: I am, therefore, not aided in diagnosis by this x-ray examination except that there is no clearcut evidence of increased intracranial pressure, which should be shown at this age by separation of the sutures. The widening of the vertebral canal is not borne out by the finding of any abnormal structure by the contrast medium as described in the protocol. Were any head measurements taken at the two admissions that might indicate the development of increasing intracranial pressure? One would expect a growth normally of 2 or possibly 3 cm, in three months, but not more.

Dr. Allan M. Butler: No head measurements were taken.

Dr. Ross: At thirteen months of age the child was readmitted with the additional findings of increased irritability and a broad-based gait. I wonder how much significance to attri-

*Physician, Children's Medical Service, Massachusetts General Hospital.

Ever since man went down
to the sea in ships



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bute to symptoms of unsteadiness at the age of thirteen months. Inasmuch as this child was just bginning to learn to balance, it would be a little difficult to evaluate his ability to walk. A broad-based gait would be unusual in a child just starting to walk and probably was of significance. The spinal-fluid pressure on the second examination was slightly above the upper limits of normal, but in a child of thirteen months who is struggling, as almost invariably happens, the reading is of no great significance. However, the rise in cerebrospinal-fluid total protein from the original reading of 71 mg. to 160 mg. per 100 cc. some months later suggests the presence of some irritative lesion in the central nervous system. The next information of importance is that no electromyelographic evidence of a lesion in the cervical column was elicited, but there was a displacement forward of the fourth ventricle, with lateral ventricles enlarged,—in other words, evidence of a space-occupying lesion in the posterior fossa,—with some block in the ventricular system.

Could a space-occupying lesion in the posterior fossa explain the whole picture, the broad-based gait being due to some lesion in the cerebellum? Yes. The irritability of a child is a hard thing to define, but certainly increased intracranial pressure with headache may express itself simply as increased irritability in a child of ths age. The torticollis of nine months' duraton is rather hard to accept on the basis of a lesion present in the posterior fossa for this time. It must represent the excitation of the nerve due to infiltration or pressure or possibly a cerebellar ataxia, which in my limited experience does not seem likly. However, we will be instructed, in that, I am sure, by more proficient observers. Therefore, without the benefit of seeing th films, but accepting the statement in the protocol, I believe there was a space-occupying lesion in the posterior fossa.

Could the lesion have been due to infection? There was no evidence that the tuberculin test or blood Hinton test was positive. Either tuberculosis or syphilis might produce a granulomatous lesion. A pyogenic abscess of this duration would be unlikely, and there was no evidence of any infection. I shall therefore dismiss that possibility.

That leaves me with the possibility of a tumor n the cerebellum. A tumor in the cerebellum of an infant progressing for nine months without producing more obvious symptoms than this is probably a slowly growing tumor. If it was a slowly growing tumor, at this age statistically it probably was an astrocytoma. If the symptomatology of the torticollis was not related and there were two separate diseases, this could have been a more malignant type of tumor, such as a medulloblastoma. However, I will leave my diagnosis as cerebellar tumor, probably astrocytoma, producing cerebellar ataxia with torticollis.

A Physician: I wonder if you would add a dermoid cyst

Dr. Ross: It is fair enough to say that one can go through a whole list of possible lesions that might occur. I mentioned these two tumors because of the statistical chances.

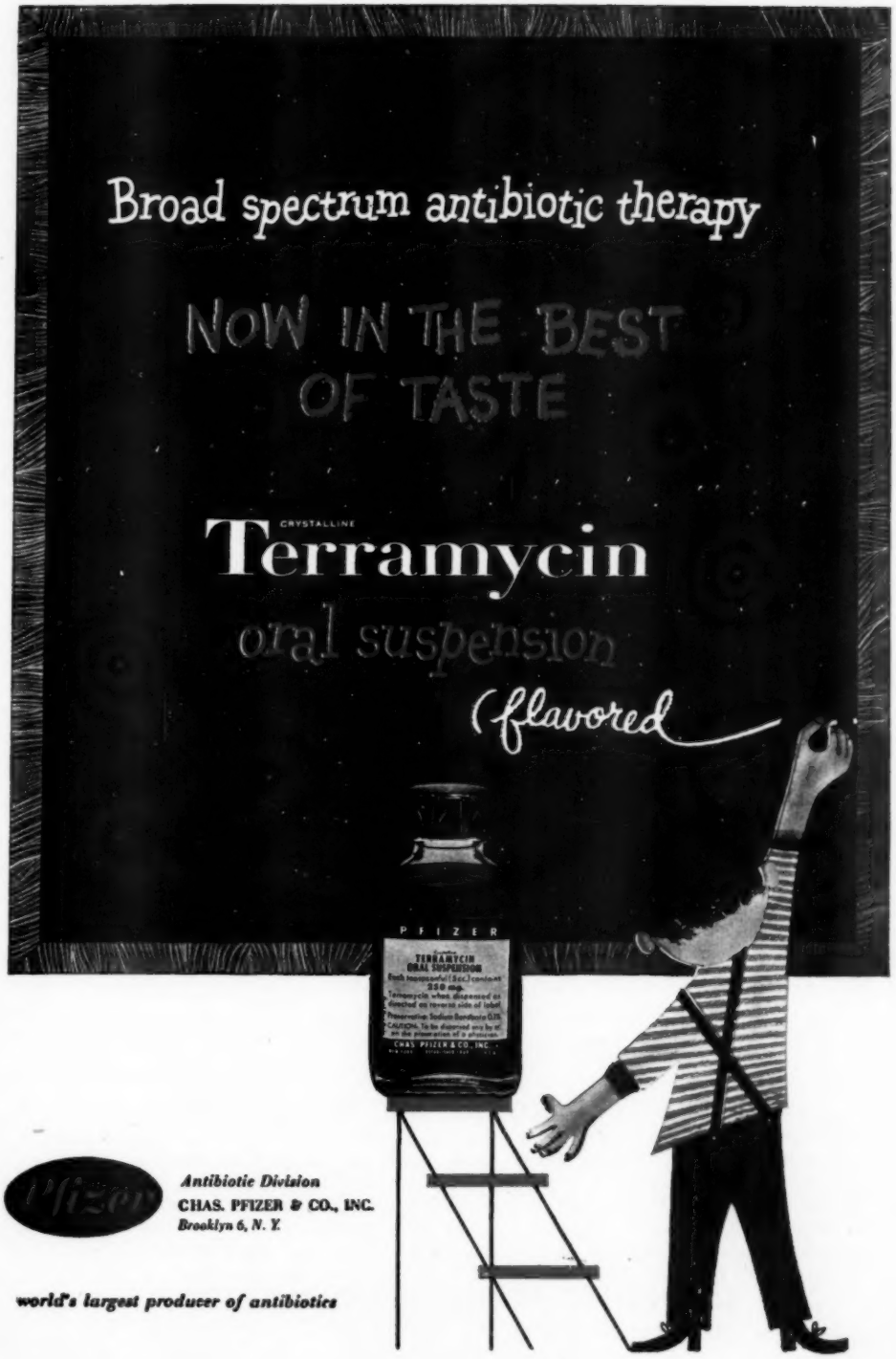
Dr. Bertram Selverstone: I believe it would be rather unusual to have a total protein of 160 mg. per 100 cc. with a dermoid cyst. That suggests a more actively meoplastic lesion.

Dr. Tracy B. Mallory: Dr. Selverstone, would you tell us the opinion on the ward?

Dr. Selverstone: We were very puzzled by this whole picture, and the diagnosis was not clear in our minds until we had done the pneumoencephalogram that showed just what was described. Although there was some disagreement among the radiologists, there was generally though to be an anterior displacement of about 1 cm. of the fourth ventricle, whose outline was otherwise fairly normal. We therefore believed that we were dealing with a cerebellar tumor. In view of the long history we thought, as Dr. Ross did, of an astrocytoma or possibly of a dermoid cyst in spite of the unusually high protein. We also considered the possibility of involvement of, the accessory nerves as a cause for the torticollis.

Dr. Mallory: Would you like to comment on the clinical features, Dr. Kubik?

Dr. Charles S. Kubik: There were some interesting features about the case that might be mentioned. The head could be straightened out, partly at least, without an anesthetic. It seemed to me that the position of the head was not due to muscle spasm or paralysis. The patient always assumed the same position, lying face down with his rear end up in the air and his head down agaist the pillow and flexed acutely to one side. That, together with the nystagmus and the unsteady gait, suggested a



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lesion in the posterior fossa, possibly causing a disturbance of the postural reflexes. I have never seen another case like this. Tumors of the posterior fossa are not very uncommon, and there is usually a little tilting of the head, but nothing like this.

Dr. Selverstone: Most of us thought there was a reduction in the bulk of the posterior cervical muscles on the right as compared with the left, and we thought that there was some spasm of the left posterior neck muscles as well. As noted in the protocol, we also considered the right sternocleidomastoid muscle to be diminished in bulk as compared with that on the left. I might add that there have been 2 similar cass to my knowledge at the Children's Hospital within the past few years.

CLINICAL DIAGNOSIS

Tumor of posterior fossa.

DR. ROSS'S DIAGNOSIS

Astrocytoma of cerebellum.

ANATOMICAL DIAGNOSIS

Astrocytoma of cerebellum.

PATHOLOGICAL DISCUSSION

Dr. Mallory: We might look at the pictures of the operation, Dr. Selverstone.

Dr. Selverstone: On the slide taken at operation before the arachnoid was opened, the medulla is grossly expanded and extends down to the lower border of the lamina of the second cervical vertebra. The medulla was diffusely widened and discolored, slightly more on the left side than on the right. When the arachnoid was opened, lying just beneath was a tumor, which appeared to arise from the closed part of the medulla. It extended into the lower part of the fourth ventricle and formed a collar around the medulla. The tumor could be followed around to the point where it was actually in contact with the accessory nerves of either side as well as with the cervical nerve roots. There was, as is commonly the case, no posterior root of the first cervical nerve, but its anterior root and both the anterior and posterior roots of the second nerve as well were involved. The tumor appeared greasy and was gray. It was impossible to remove the tumor entirely because of its very firm adherence to the closed portion of the medulla and to the floor of the fourth ventricle. Accordingly, I would guess that I was able to remove from 50 to 70 per cent of the lesion. I left an extensive decompression.

Dr. Kubik: The tumor was an astrocytoma. Was it cystic?

Dr. Selverstone: It was entirely solid.

Dr. Ross: Was the torticollis due to irritation of the nerve or to paralysis?

Dr. Selverstone: It is hard to say. One might speculate that there might have been irritation of the left nerves and paralysis of those on the right.

Dr. Kubik: How is the patient now?

Dr. Selverstone: Postoperatively he was much less irritable than before, and he seemed much happier. He was given x-ray therapy and a month after operation was dicharged. I do not think that any apparatus should be used in an attempt to correct the torticollis. It was not improved since operation.

PERSONAL NOTES

Doctor Kenneth C. Baker of Tucson attended the Tenth International Congress of Dermatology in London, England, July 21 to 26. Doctor Cleveland J. White with whom he was formerly associated in Chicago, and Doctor Baker had a scientific exhibit at the Congress on Diseases of the Nails. Following the meeting Doctor and Mrs. Baker toured England and Scotland.

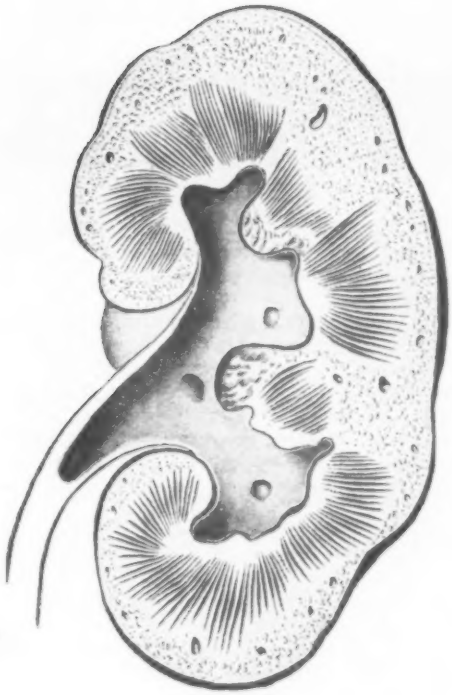
NOTICE TO MEDICAL AUTHORS — 1953

The Scientific Program Committee for the 1953 Tucson meeting feels it is necessary to limit the number of papers given by Arizona speakers so as to permit more time for guest orators and for discussion. In order that the Committee may select those most worthy of presentation you are urged to start working on your paper now, and to send five copies of an abstract of it to the Committee chairman before December 1, 1952. When approved by the Committee, you will be notified in sufficient time to complete the final draft.

SCIENTIFIC PROGRAM COMMITTEE

By Edward M. Hayden, M. D., Chairman
1603 N. Tucson Blvd.
Tucson, Arizona

attain the goal in acute urinary tract infections–



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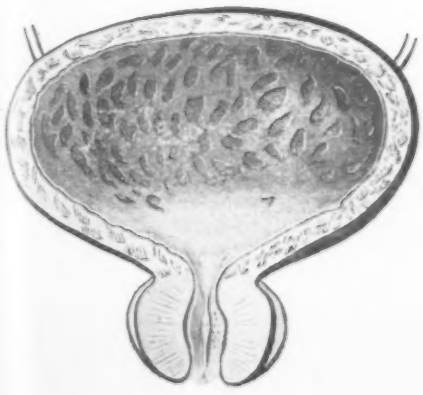

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THE *Secretary's* MESSAGE

IT'S ALL OVER BUT THE VOTING!

The Democratic convention closed in Chicago on a note of confusion and turbulence, and the nominees of both parties now can settle back to do some serious thinking before oiling up their machines for the big vote-gathering campaign in November.

In glancing over the two party platform, the things that have to be done or undone will not be easy. The problems are plain, but there is a wide gap between statements of principle and execution.

Physicians everywhere are vitally interested in the health planks of both the Republican and Democratic platforms.

The Republicans at their convention came out unalterably opposed to socialized medicine. "We are opposed," the G.O.P. plank said, "to federal compulsory health insurance with its crushing cost, wasteful inefficiency, bureaucratic dead weight and debased standards of medical care."

But the health plank of the Democratic party dodged the issue of compulsory health insurance. It was so carefully worded in many respects that there could be a wide divergence of opinion when it comes to actual interpretation. But as Dr. R. B. Robins, a delegate from Arkansas, said after the platform was adopted: "It might have been worse."

Those sections dealing with health generally, research and hospitals and health centers, were practically non-controversial, but the proponents of socialized medicine succeeded in nailing the word "federal" into the medical education plank. "We advocate federal aid for medical education" leaves nothing to guesswork. It is a clear-cut principle of where the Democratic party stands.

The section dealing with the cost of medical care hedges considerably, leaving a great deal to interpretation. The section begins: "We also advocate a resolute attack on the heavy financial hazard of serious illness." That could mean a lot of things, depending on the way you look at it after the November election. Further along, the section commends President Truman for establishing his Commission for the Health Needs of the Nation. In that portion of the section, the Democratic platform writers shifted the problem of compulsory health insurance to the shoulders of the commission. This action confirms the opinion of the American Medical Association that the commission is a politically inspired one, which both the President and the Democratic party are using as a means to remove the issue of socialized medicine from the fall campaign.

The fact remains that the Truman administration has strongly promoted legislation for years to socialize the medical profession. The health plank of the Democratic platform is an obvious attempt to get out from under this unpopular issue.

Here is the full Democratic health platform:

We will continue to work for better health for every American, especially our children. We pledge continued and wholehearted support for the campaign that modern medicine is waging against mental illness, cancer, heart disease and other diseases.

Research: We favor continued and vigorous support, from private and public sources, of research into the causes, prevention and cure of disease.

Medical Education: We advocate federal aid for medical education to help overcome the growing shortages of doctors, nurses, and other trained health personnel.

Hospitals and Health Centers: We pledge continued support for federal aid to hospital construction. We pledge increased federal aid to promote public health thru preventive programs and health services, especially in rural areas.

Cost of Medical Care: We also advocate a resolute attack on the heavy financial hazard of serious illness. We recognize that the costs of modern medical care have grown to be prohibitive for many millions of people. We commend President Truman for establishing the non-partisan commission on the health needs of the nation to seek an acceptable solution of this urgent problem.

Editorial

ARIZONA MEDICINE

Journal of

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 9 SEPTEMBER, 1952 NO. 9

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Submit manuscript typewritten and double-spaced.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

ARE YOU FOR COMPULSORY HEALTH INSURANCE

Statement of General Dwight D. Eisenhower:

"I am not going to answer too specifically, because what could be in a bill labeled compulsory health insurance? I am not so certain. But I can tell you this: I am quite certain over the years that I was at Columbia, no one spoke out more than I did against the centralization of power in Washington, against bureaucratic government and submitting our lives toward a control that would lead inevitably to socialism. . . . I do believe that every American has a right to decent medical care."

In discussing Federal aid to medical education, General Eisenhower said that in private universities we must "support medical education by private means, because if we didn't it would be the first step toward the socialization of medicine, and I am against socialization."

Statement of Governor Adlai Stevenson of Illinois:

"I am against the socialization of the practice of medicine as much as I would be against the socialization of my own profession, the law. . . . If the insurance principle could be brought to bear on these catastrophic illnesses, it would largely eliminate the specter of terror from the average home. . . . I am sure that . . . the common objective can be largely realized without the destruction of professional independence.

"Basically, the problem is how to lift people over the costs of major illness. I don't know whether voluntary plans can do the job. I think the new commission on medical needs may well add some light and remove some heat, enabling us to find a satisfactory solution to this perplexing problem."

Statement of Senator Richard M. Nixon:

". . . There is no chance whatever at this time for any type of compulsory health insurance program to be enacted. . . . On the other hand, I think you must recognize, *and that all of us who are interested in this fight must recognize*, that those who favor such legislation will continue to work fanatically for their cause, in the hope that somehow, sometime in the future, they will be able to accomplish their purpose.

"I think . . . that a great number of people, probably a majority of the people in the country, are convinced that the compulsory health insurance programs which sound so good in theory have not worked out in action in those nations which have tried them.

"I am convinced that the medical profession has taken a very long step in the right direction with its recently announced program of subsidizing medical schools on a voluntary

rather than on a governmental basis. I would suggest also that additional voluntary action is needed (in dealing with) the problem of encouraging wherever possible voluntary health insurance programs. It seems to me that the objective toward which we should work in the United States is a system where eventually anybody who wants health insurance can get it—where those who should have health insurance are encouraged to get it—but where no one in the United States is compelled to take out such insurance against his will. If the profession adopts that objective we will remove by voluntary action the strongest arguments that the proponents of government control of the medical profession have at the present time.

"I believe it is essential that all members of the medical profession recognize that an attempt to socialize any American profession—any American institution—constitutes a threat to all.

"Traditionally, the great accomplishments in this country have not been through government action, but through individual and cooperative action. . . . (Our task) is by precept and by example, to prove to the people of the world that a free people, working as individuals, working cooperatively, can solve the problems of our society and can solve them more effectively than can a government."

Statement of Senator John J. Sparkman:

"I am in favor of adequate medical attention for the people of this country. However, I have not favored what is generally known as Socialized Medicine.

"I would be opposed to any plan which I thought would, in effect, socialize medicine, and to any medical program which would destroy the relationship of doctor and patient."

AMERICAN COLLEGE OF ALLERGISTS

PITTSBURG, PA., — Patients who might otherwise die from a severe, continous attack of bronchial asthma can now be saved by a form of intravenous ACTH treatment, according to Dr. Stephen D. Lockey, of Lancaster, Pa., who spoke before the Eighth Annual Congress of the American College of Allergists here today. Dr. Lockey reported on work he and his associates (Drs. John D. Paul, John L. Grosh, Arthur S. Griswald and Donald S. Stubbs) had done at Lancaster General Hospital. Using the slow intravenous administration of ACTH dissolved in a solution of distilled water containing amounts of glucose and potassium chloride, the doctors found that desperately ill patients could be markedly improved — often within 24 hours — so that they survived life-threatening episodes of status asthmaticus.

In his report, Dr. Lockey emphasized that this treatment must be carefully supervised by a well-trained, cooperative medical team who constantly adjust the treatment to meet the patient's changing needs. Such treatment, Dr. Lockey said, "gives excellent results, and usually produces complete relaxation within twenty-four hours."

——o——

PITTSBURG, PA. — In certain cases of skin trouble, the human skin itself might well be the cause of its own disorder.

This theory of the self-punishing skin was discussed by Dr. Frank A. Simon, Assistant Clinical Professor of Medicine, University of Louisville, at the Eighth Annual Congress of the American College of Allergists which began its three-day session here today.

According to Dr. Simon's hypothesis, dander is the villain in the piece — that is, if the patient is suffering from certain atopic, or allergic, skin eruptions. Theoretically, this is what happens: dander, developing from the epidermis, returns to plague the inventor by becoming the very stuff to which that same epidermis is allergic. In the professional language of Dr. Simon. "We have, therefore, in atopic dermatitis, a condition which is thus far unique in that almost all cases are caused by an allergen (dander, n this case) from the same source — the skin."

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TOPICS OF *Current Medical* INTEREST

RX, DX, AND DRS.

By GUILLERMO OSLER, M. D.

This column has contained comments on the fabulous DR. CLARENCE SALSBURY during the several years of its existence. Salsbury, the Dr. Big of the Navajos; Salsbury, chairman of the yearly Clinical Congress; Salsbury, retired from Ganado; Salsbury, Chief of the Arizona Bureau of Preventive Medical Services. . . . Now we can join the general murmur of approval as he succeeds Dr. James Ward as head of the State Health Department. Congratulations all around!

PRICE CUTS.—Congratulations are also due Merck & Co. for the ninth reduction in the price of Cortone (cortisone). This time it dropped 40 per cent.

Isoniazid costs are still being lowered by the drug companies, but it must be reported that the news hasn't reached some druggists. (That COULD be an explanation of their often disproportionate charges).

The American Hospital Supply Corporation bulletin tells of an Ohio hospital which has taken the lead in setting up A NEW FEE SYSTEM. . . . Patients are charged for services, medications and accommodations on a cost basis, plus 10 per cent. . . . This is easily explained and understood. It is good business. It allows for a monthly review of costs and rates. Charity work can be charged against endowment or special funds.

A national press service tells of the caution expressed by a medical journal over MISUSE OF VITAMINS. "Go Easy on Vitamins!" it says. . . . This is a rare warning, and probably only healthy people will read it. The origin was an editorial by Dr. John Caffey in The American Journal of Roentgenology and Radium Therapy. Useless use of Vitamin A was the particular angle of the article, and concentrates were called 'probably superfluous, certainly expensive, and possibly hazardous.'

Some of the recent FIGURES ON HOSPITALIZATION in the United States are worth chewing over. . . . It was possible to say, ten years ago, that the hospitals admitted 15 million patients; now the total is 18.2 millions. The 6,637 registered hospitals have about 1,530,000 beds. Three million babies were born in hospitals last year. . . . General hospitals care for 42%; mental hospitals 48%; TB hospitals 6%; and other hospitals 5%. . . . Government groups control 3 out of 10 hospitals and provide 7 out of 10 beds. . . . Admissions to TB hospitals dropped from 113,000 to 107,000 in 1951, but the average daily census of 73,588 was 1,200 higher than ever.

The California attorney general opines that CLINICAL LABORATORIES may perform VENIPUNCTURES, etc., for persons whose licenses do not allow them such a privilege. . . . That is a boon to chiropractors and their ilk.

Here is a possible TELEPHONE CONVERSATION OF THE FUTURE,—"Operator, please try and get me a better connection; the QRS complex is not coming thru clearly. That's better, thank you. Oh yes, Dr. Jones! It looks like a coronary to me, but let's try Lead I again". . . . Three medical inventors in Omaha have devised a preamplifier which strengthens the impulses from an ECG into FM signals which can be sent over a telephone wire and charted by the specialist. The GP can discuss the graph with the cardiologist over the same wire.

Two 'American Colleges' (Radiology and Chest Physicians) are lending support to the plan to make the use of chest x-rays more widespread. . . . The American Hospital Association and the National TB Ass'n. have urged hospitals to adopt the method as a routine. The two Colleges also urge physicians to x-ray all patients, and advise that patients from surveys be subject to medical supervision.

The CIBA Clinical Symposia has presented a few dozen beautifully colored photographs of NORMAL AND PATHOLOGIC FUNDI. The photographs, plus a descriptive lecture, is from the collection of Dr. Arthur Bedell of Albany, N. Y. . . . It is a sad admission for an internist to make, but the marked variations in different types of normal and abnormal fundi, as well as the similarity between some normals and abnormals, forces us to lean on the opthalmologist—and hope that HE can be fairly sure.

An original paper, "The Incautious Use of Antibiotics,—" published in ARIZONA MEDICINE in July 1951, has been put out in abstract form by the National TB Ass'n. and reprinted in the August 1952 Ohio State Medical Journal. . . . It exposed the way in which tuberculosis can be missed by treating respiratory symptoms without a definite diagnosis, and it stressed the value of routine x-rays and fluoroscopy.

Note the huge recent advertising campaign for an ANTI-BED-WETTING METHOD. The device is a radio-like cabinet, rented but not sold, said

to be invented by a doctor. A list of publications by other M.D.'s is usually given. It promises a probable correction of enuresis in 2 to 4 weeks. . . . From the advertising you would hardly guess that it works.

The exact extent or limits of the WORLD HEALTH ORGANZATION (WHO) are fairly obscure to the average physician—or at least to this one. . . . They seem even more distant, after one reads of the trip planned by Dr. Edwin Lennette of Sacramento, an authority on Q fever. He is a member of the WHO Expert Committee, on Zoonoses. . . . One shouldn't say WHO? to this, but WHAT?

TIME Magazine takes the conservative role in a discussion of HEXAMETHONIUM, the most recent nerve-blocker in the treatment of high blood pressure. . . . TIME stresses the need for care and control in its use, and decried the demand by patients on physicians for specific new drugs when they may not be indicated.

A paragraph in this column several months ago gently ribbed the journal 'NURSING HOME ADMINISTRATOR'. . . . Its publisher read it, replied at once, and thus it gets another paragraph. . . . The cover of the current number is more pleasant than that of the previous one. The brief notices, illustrating equipment of possible use to nursing homes, are attractive. Articles about care of chronic and aged ill persons could be valuable. . . . (You're welcome, Mr. Chary).

Dr. Walter Alvarez now writes popular medical articles for The Register and Tribune Syndicate, Inc. . . . He suggests that every M.D. who has to care for a patient with severe arthritis obtain a copy of the HANDBOOK ON RHEUMATIC DISEASES by the Arizonans Holbrook & Hill. He might have said 'purchase' instead of 'obtain'. . . . It helps people who write or publish books.

MEDICAL ASPECTS OF CIVIL DEFENSE

The Council on National Emergency Medical Service of the American Medical Association has, during the past several months, sponsored a series of articles on the medical aspects of civil defense which has appeared in the Journal of the American Medical Association.

These articles have now been reproduced in booklet form. It appears that the articles are of genuine interest to the medical profession and the general public. The booklet sells for 25c a single copy, and 20c per copy for orders of 100 or more which may be placed direct with the Council on National Emergency Medical Service of the American Medical Association, 535 N. Dearborn Street, Chicago 10, Illinois.

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NATIONAL EDUCATION CAMPAIGN

A copy of the Health Plank in the *Democraic* Party Platform for 1952, adopted in Chicago, July 23, is enclosed herewith for your information, and for comparative study with the Health Plank in the *Republican* Party Platform, sent you earlier.

It is interesting to note that this year's statement of policy on the health issue by the Democratic National Convention is considerably more moderate than the position taken by President Truman, and is also more moderate than the Party's previous position.

The Democratic Health Plank, while it advocates Federal aid to medical education, does not contain specific endorsement of National Compulsory Health Insurance.

As anticipated by medical leaders, when the President's Commission on the Health Needs of the Nation was created some six months ago, the Democratic statement of policy seeks to avert a showdown before the voters on the health issue by commending President Truman for the creation of a "non-partisan Commission to seek an acceptable solution of this urgent problem."

The Republican statement of policy on the health issue this year, as you will recall, was an unqualified declaration that "We are opposed to Federal Compulsory Health Insurance with its crushing cost, wasteful inefficiency, bureaucratic dead weight and debased standards of medical care." The Democratic plank is anemic by comparison, but it does pay indirect tribute to the effectiveness of the doctors' crusade against Socialized Medicine, in that it seeks to remove the issue from consideration during the forthcoming Presidential and Congressional election campaigns.

Elmer L. Henderson, M.D.
Chairman, Coordinating Committee

HEALTH INSURANCE PLANK
1952 *Democratic* Party Platform

We will continue to work for better health for every American, especially our children. We pledge continued and wholehearted support for the campaign that modern medicine is waging against mental illness, cancer, heart disease and other diseases.

Research: We favor continued and vigorous support, from private and public sources, of research into the causes, prevention and cure of disease.

Medical Education: We advocate federal aid for medical education to help overcome the growing shortages of doctors, nurses, and other trained health personnel.

Hospitals and Health Centers: We pledge continued support for federal aid to hospital construction. We pledge increased federal aid to promote public health thru preventive programs and health services, especially in rural areas.

Cost of Medical Care: We also advocate a resolute attack on the heavy financial hazard of serious illness. We recognize that the costs of modern medical care have grown to be prohibitive for many millions of people We commend President Truman for establishing the non-partisan commission on "the health needs of the nation to seek an acceptable solution of this urgent problem.

HEALTH INSURANCE PLANK
1952 *Republican* Party Platform

We recognize that the health of our people as well as their proper medical care cannot be maintained if subject to federal bureaucratic dictation. There should be a just division of responsibility between government, the physician, the voluntary hospital, and voluntary health insurance. *We are opposed to federal compulsory health insurance with its crushing cost, wasteful inefficiency, bureaucratic dead weight, and debased standards of medical care.* We shall support those health activities by government which stimulate the development of adequate hospital services without federal interference in local administration. We favor support of scientific research. We pledge our continuous encouragement of improved methods of assuring health protection."

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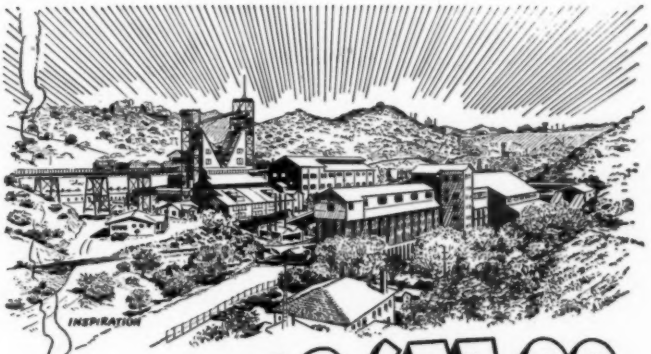

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PURCHASED IN ARIZONA BY ARIZONA MINES

Arizona's mining industry is vitally important to the thousands of suppliers and merchants living throughout Arizona, who furnish material and supplies, machinery and parts, services and the many other necessary elements that insure the flow of Copper, Lead and Zinc to the nation and the world.

For the past forty years, Arizona's mining industry has been urging the purchase of Arizona products, trading with home merchants, the "Buy in Arizona" movement. During the past five years Arizona mines bought **$81,652,677.20** from Arizona merchants, wholesalers, manufacturers, railroads, power producers and other Arizona firms. In **1951**, Arizona mines purchased **$19,345,478.80** from Arizona suppliers. Great as these expenditures are, large scale developments now in progress, such as San Manuel, Silverbell, Copper Cities and Bisbee will further increase such expenditures in future years.

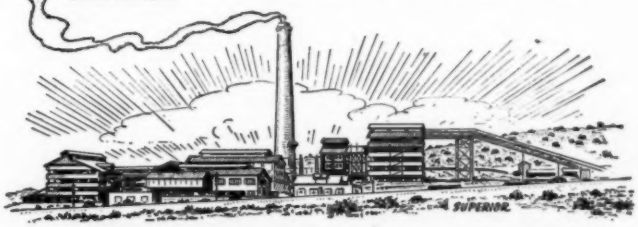
The development and operation of Arizona's low-grade copper orebodies, both Open Pit and underground, calls for ever increasing purchases of supplies and services from Arizona firms.

In Open Pit operations huge tonnages of waste rock must be stripped away before any copper-bearing ore can be recovered. In Underground Mines miles of tunnels must be driven before mining of the ore can be started. The ore itself contains less than 20 lbs. of copper to the ton, but before this copper can be recovered the ore must be mined and processed. Processing consists of crushing, concentrating, smelting and refining. Following all this the copper must be sold in competition with copper produced in other states of the Union and in foreign countries, as well, before there can be any return on the money that has been spent on the property.

Huge sums of money, beyond the conception of the average person, must be invested to equip, develop and operate a mining property. Without these expenditures for mining machinery, railroads, concentrating plants, smelters and refineries, Arizona's ore deposits would be worthless, as they could never be worked on a small scale. These expenditures total thousands of dollars for every worker employed by the mining companies. They also bring real business to Arizona suppliers. In addition to the large Copper mines, Arizona has many small mines and mining prospects, lead, zinc and non-metallic mines, all of which play their part in building up business for Arizona.

Then too, throughout the State, there are all the thriving communities dependent on the mining industry. Here Arizonans live and work to produce the copper, lead, zinc, gold and silver which makes Arizona the leader in America's metal production. These communities depend on the farmers and ranchers of the state for food supplies, and they are among the best customers of Arizona's merchants.

The importance of the mining industry to the welfare of the whole State of Arizona is tremendous. It supports a huge payroll; it pays the largest share of Arizona's taxes; and it provides a continuing market for Arizona products and supplies.



ARIZONA MINING INDUSTRY

Arizona Small Mine Operators Association, 60 Councils in 11 Arizona counties, 2000 members; **American Smelting & Refining Company**, Hayden, Patagonia and Silverbell; **Anaconda Copper Corporation**, Hillside; **Castle Dome Copper Company**, Miami; **Copper Cities Mining Company**, Miami; **Eagle Picher Mining & Smelting Company**, Sahuarita; **Inspiration Consolidated Copper Company**, Inspiration; **Kennecott Copper Corporation**, **Ray Mine**, Ray; **Magma Copper Company**, Superior; **Miami Copper Company**, Miami; **Phelps Dodge Corporation**, Bisbee, Douglas, Ajo, Morenci, Jerome; **Sun Knight Mining Lease**, Christmas; **Southwest Dome Mining Corporation**, **Iron King Mine**, Humboldt; **St. Anthony Mining & Development Company**, Tiger; **Arizona Asbestos Producers Association**, Globe; **Wenden Manganese Producers Association**, Wenden.

AMEF CAMPAIGN

Dr. Elmer L. Henderson reports that as of May 23, contributions to the American Medical Education Foundation's 1952 campaign totaled more than $600,000 (incl. AMA grant). In four months, the Foundation received 2,500 contributions—more than the total number received during all of 1951.

This is a great start and most certainly represents both rapid and steady progress. However, we must make every effort to maintain the pace, and increase it if possible, if the Foundation is to reach its 1952 national goal of $2,000,000. Gifts received from individual physicians so far this year have averaged $41.00. Although this is a high per-gift average, many checks have been for amounts ranging from ten to fifty dollars.

Activity at the state committee level can be seen in almost every state. This is a healthy sign and one which will insure success.

Are you one of the group of Arizona physicians that have forwarded your pledge in this campaign? Or do you belong to the group of members that have made no gift? Think it over and decide to which of the above group you want to belong. Our medical schools need your financial help—NOW—Donations are tax exempt and you are free to choose the school you wish to aid. If you have contributed in 1951, we ask why not repeat in '52 – or increase your pledge for this year.

BOOK REVIEW

"The Serpent-Wreathed Staff"—a novel by Alice Tisdale Hobart.

If Mrs. Alice Tisdale Hobart had managed to devise a suitable ending for her 402-page novel, "The Serpent-Wreathed Staff," about sixty pages sooner than she did, a tolerant critic would be able to say that she had written a faulty but highly interesting story of human conflicts and loyalties.

Unfortunately, however, the latter part of the book degenerates swiftly and recklessly into an amazing propaganda piece for National Compulsory Health Insurance. The last forty or fifty pages sound as if Mrs. Hobart knocked them out hastily at a desk piled high with pamphlets, speeches and news releases handed out by Federal Security Administrator Oscar Ewing and the Committee for the Nation's Health.

This uncraftsmanlike abuse of artistic license, added to some of the implications built up in earlier pages, creates the impression that the entire novel was designed as a subtle presentation of the case for Socialized Medicine. As a result, Mrs. Hobart undermines much of the validity that does exist in some of the earlier parts of this book about doctors, modern medicine and a changing world.

Despite her failure to give a true interpretation of the social and economic developments in medicine today, the author shows her usual skill in weaving a plot and telling a story. She is at her best when describing the personal problems and struggles, the emotional triumphs and defeats, of her principal characters. On this fictional level the book has undeniable merit and strength, for the reader finds himself sharing the fears, anxieties and grief of the people in the novel.

Central figures in the story are two brothers, Dr. Alan Towne and Dr. Sam Towne, grandsons of old Dr. Samuel Towne, who had achieved medical eminence only after many years of struggle and criticism because of his unorthodox ideas. Sam, the older of the two brothers, is portrayed as successful, wealthy, conservative. Alan is drawn as the idealistic, progressive pioneer, striking out in new and dangerous directions and carrying on in the tradition of his grandfather.

Main action of the novel begins shortly after the end of World War II when Alan leaves a comfortable, assured partnership with Sam to start a group practice. From then on the troubles and tragedies mount in rapid sequence and growing complexity. In the short space of three or four years Alan becomes an "Anthony Adverse" in modern American medicine.'

When the facile, all-inclusive plot is used as a mechanism for discussion of the social, economic and political aspects of modern medicine, the book suffers not only from the standpoint of literary merit but also from the standpoint of accurate reporting. On this level the book is dangerously superficial. Complex problems and issues affecting the practice of medicine are introduced in rapid-fire, hop-skip-and-jump fashion—over-simplified and over-dramatized, but mixed with just enough truth and half-truth to give credence to a distorted picture.

As all of these elements are woven deftly into the novel, their manner of presentation builds

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the subtle implication—even in the earlier parts of the book—that most doctors are primarily and selfishly interested in making money, bolstering their own reputations and preserving the status quo in medicine.

Mrs. Hobart also gives the impression that group practice, health insurance plans, preventive medicine and similar ideas are brand new developments—practically untried and unheard of in a present-day American city. Actually, most of the concepts and projects which occur to Alan Towne, in sudden flashes of inspiration, are part of the knowledge of any alert medical student. Actually, the industrialists and businessmen on Alan's hospital board are utterly untypical when they talk and act as if they had never heard of such a thing as group health insurance for their employes.

Before Mrs. Hobart writes another novel on this subject, someone should familiarize her with the major facts and realities in the field of modern medical economics.

Someone, for example, should tell her about the many famous clinics and countless other forms of group practice which are in successful operation throughout the country, some of them since around the turn of the century.

Someone should tell her about the hundreds of fast-growing, constantly-improving Voluntary Health Insurance plans, which by the end of this year will be protecting an estimated 90 million Americans against the major costs of illness and accidents.

Someone should tell her about the Nationwide progress of State and County Medical Societies in setting up doctor placement programs, grievance committees, emergency call systems, cost adjustment committees, local health units and a variety of other activities designed to make good medical care available to all the people.

Incidentally, someone also should inform Mrs. Hobart that the "National Medical Association", a name which she uses as a pseudonym for the American Medical Association, is the actual and proper name of the National organization of Negro physicians.

But Mrs. Hobart, unmindful of such trivia as facts and accuracy, writes furiously on, and after only two or three years of struggle in group practice and as head of a group hospital, Dr. Alan Towne is an advocate of Government Health Insurance. Apparently neither the author nor the good young doctor sees the glaring contradiction between Government medicine and Alan's own philosophy of careful, personalized treatment of the whole patient, in mind and spirit as well as in body.

Everyone interested in American medicine, and in the effort to find intelligent solutions to our medical care problems, should read "The Serpent-Wreathed Staff"—if for no other reason than to help repair the damage which the book does.

Read simply as a novel, it is a moving, absorbing story.

Read as a source of information affecting public opinion on medical-economic issues, it unfortunately is an example of careless, superficial writing, with a built-in conclusion contrary to the convictions of the great majority of Americans today.

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Woman's AUXILIARY

HIGHLIGHTS FROM CONVENTION

From the President's Message to the Chicago Convention comes this sentence, "The work of our predecessors sets a high standard which we shall strive to maintain."

"WE" at one time carried little weight but currently we represent sixty thousand (60,000) women for whom Mrs. Ralph Eusden is National spokesman. We have grown steadily and with increasing purpose over a period of thirty (30) years. Our worth is measured in the willing service we have rendered to our local communities and to our Nation under the guidance of the American Medical Association.

Through Organization very tangible aid has been given as witnessed in two (2) large contributions made this year. For the second time a check for $10,000.00 was given to the American Medical Education Foundation and $500.00 was given to the World Medical Association. Last year $500.00 was given to the Committee on Careers in Nursing and $100.00 to the World Medical Association.

With such evidence of our power for good, with service to others so apparent the expansion of our Program through more and more women is made easy. To those who are eligible do accept the invitation extended by the present Auxiliary membership to join us in a sincere effort to build a better tomorrow.

Give the October meeting to the Legislative Chairman who knows what goes on in Washington, also the reaction of the Medical Group whether for good or bad.

We are going to vote certainly, but let that vote be justified and made with intelligent reasoning based on factual knowledge.

One of our greatest opportunities for service to lay groups is by the promotion of Today's Health, the official publication of the American Medical Association. This magazine is not available on the news stands but by subscription only, so without apology let us push this material to a public who receives it gratefully.

And speaking of education give yourself over to reading the new and attractive Bulletin, it will make you proud that you are a woman especially a physician's wife.

Within our State everyone knows that Mrs. Jesse D. Hamer is a past National President and remains on the National Board as Historian, most of us know that Mrs. Thomas Bate was Western Regional Organization Chairman but, did you know that Mrs. Carlos C. Craig is Western Regional Chairman of the newly developed Nurse Recruitment Committee?

It is pleasing to note that the American Medical Auxiliary is receiving recognition with the leading women's groups in the country and more pleasing to Arizonan's to realize they have contributed substantially to the National picture through individual effort.

Ruth E. Schoffman
Phoenix, Arizona

TAKEN FROM "THE COURIER" Woman's Auxiliary to the California Medical Association

HEAR THIS!!! . . . One American in six is a potential beneficiary of Federal medical or hospital care . . . 19 million veterans, more than 3.5 million military personnel and dependents, more than 2 million Federal employees, 400,000 Indians and 100,000 merchant seamen . . . Federal agencies are currently hiring new employees at the rate of 2,500 people per day . . . VA's monthly report shows that as of Nov. 30, 1951, hospital patients totaled 104,863 . . . 68,177 of them were under treatment for non-service connected disabilities . . .

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